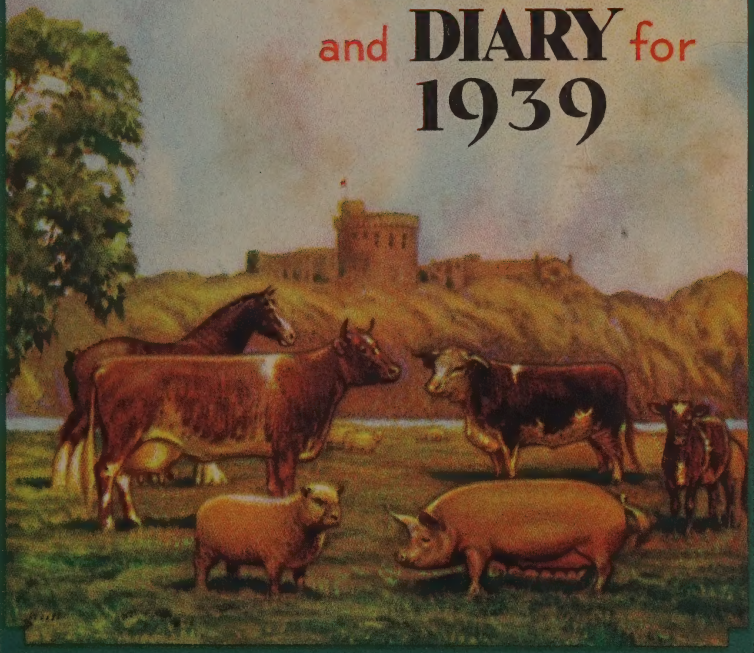
PUBLISHED SINCE YEAR 1856.

Thorley's

FARMER'S ALMANACK and DIARY for 1939



PUBLISHED BY
JOSEPH THORLEY LTD.
KINGS CROSS, LONDON.

Published by JOSEPH THORLEY, LTD. Price Sixpence.

BY APPOINTMENT TO
THE LATE KING GEORGE V.

ESTABLISHED nearly a century ago, the House of Thorley combines long experience with modern knowledge in the production of Agricultural Feeding stuffs of quality and renown.

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ERRATA

CABINET CHANGES, OCTOBER, 1938

·d President of the Council	...	Lord Runciman
Privy Seal	...	Sir John Anderson
·ry of State for Dominion Affairs	}	Mr. Malcolm MacDonald
Secreta. y of State for the Colonies		
First Lord of the Admiralty ...	...	Lord Stanhope
President of the Board of Education	...	Lord De La Warr

Otherwise as stated on Page 2.

ERRATA

Thorley's Almanack
1939

FOREIGN AND COLONIAL DEPOTS.

EUROPE—

France : ETABLISSEMENTS MAX, 96, Boulevard Diderot, Paris.
Greece : JOHN E. A. MEXAS & Co., Aristidou Street No. 1, Athens.
Holland : K. BARGER, Nassaukade 370, Amsterdam, W.
Malta : ALEXR. SANT, 544, Strada Reale, Hamrun.
Spain : J. B. MONTOBBIO, Rambla Catalüna, 11, Barcelona.

AFRICA—

East Africa (Kenya, Uganda, Tanganyika) : RABONE BROS. & Co., Mombasa, Nairobi, etc.
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South Africa : ASSOCIATED TRADE SUPPLIERS (Pty.), Ltd., Simmonds and Kerk Streets, Johannesburg.
St. Helena : SOLOMON & Co.

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South Australia : D. & J. FOWLER, Ltd., 14, King William Street, Adelaide.
E. & W. HACKETT, 73, Rundle Street, Adelaide.
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Western Australia : G. WOOD, SON & Co., Fremantle.
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FALKLAND ISLANDS CO., LTD.

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JOSEPH THORLEY, Ltd., King's Cross, London, N.1.
Telegraphic Address : "LACTIFER, LONDON."
Telephone : TERMINUS 5222 (3 lines).

THE ROYAL FAMILY.

H.M. THE KING.—George VI, b. December 14, 1895 ; m. April 26, 1923, to Lady Elizabeth Bowes-Lyon, b. August 4, 1900 ; accession December 11, 1936. Issue : 1.—Elizabeth, b. April 21, 1926. 2.—Margaret Rose, b. August 21, 1930.

THE CABINET, 1938.

Prime Minister and First Lord of the Treasury	Mr. Neville Chamberlain
Lord President of the Council	Lord Hailsham
Chancellor of the Exchequer	Sir John Simon
Lord Chancellor	Lord Maugham
Secretary of State for Home Affairs	Sir Samuel Hoare
Secretary of State for Foreign Affairs	Lord Halifax
Lord Privy Seal	Lord De La Warr
Secretary of State for Dominion Affairs	Lord Stanley
Secretary of State for Air	Sir Kingsley Wood
Secretary of State for War	Mr. Hore-Belisha
Secretary of State for India and Burma	Lord Zetland
Secretary of State for Scotland	Mr. John Colville
Secretary of State for the Colonies	Mr. Malcolm MacDonald
President of the Board of Trade	Mr. Oliver Stanley
First Lord of the Admiralty	Mr. A. Duff Cooper
Minister of Agriculture and Fisheries	Mr. W. S. Morrison, K.C.
President of the Board of Education	Lord Stanhope
Minister of Health	Mr. Walter Elliot
Minister of Labour	Mr. Ernest Brown
Minister for Co-ordination of Defence	Sir Thomas Inskip, K.C.
Minister of Transport	Dr. Leslie Burgin
Chancellor of the Duchy of Lancaster	Lord Winterton

PRIME MINISTERS, 1846 TO PRESENT TIME.

1846, July 6...Rt. Hon. Lord J. Russell (L.)
1852, Feb. 27...Earl of Derby (C.)
1852, Dec. 28...Earl of Aberdeen (L.)
1855, Feb. 10...Viscount Palmerston (L.)
1858, Feb. 25...Earl of Derby (C.)
1859, June 18...Viscount Palmerston (L.)
1865, Nov. 6...Earl Russell (L.)
1866, July 6...Earl of Derby (C.)
1868, Feb. 27...Rt. Hon. B. Disraeli (C.)
1868, Dec. 9...Rt. Hon. W. E. Gladstone (L.)
1874, Feb. 21...Rt. Hon. B. Disraeli (C.)
1880, April 28...Rt. Hon. W. E. Gladstone (L.)
1885, June 24...Marquis of Salisbury (C.)
1886, Feb. 9...Rt. Hon. W. E. Gladstone (L.)
1886, Aug. 3...Marquis of Salisbury (C.)
1892, Aug. 18...Rt. Hon. W. E. Gladstone (L.)
1894, Mar. 3...Rt. Hon. Earl of Rosebery (L.)
1895, July 2...Marquis of Salisbury (C.)
1902, July 12...Rt. Hon. A. J. Balfour (C.)
1906, Jan. 12...Sir H. Campbell-Bannerman (L.)
1908, April 8...Rt. Hon. H. H. Asquith (L.)
1910, Feb. 15...Rt. Hon. H. H. Asquith (L.)
1911, Feb. 6...Rt. Hon. H. H. Asquith (L.)
1918, Feb. 4...Rt. Hon. D. Lloyd George (L.)
1922, Nov. 20...Rt. Hon. A. Bonar Law (C.)
1923, May 25...Rt. Hon. S. Baldwin (C.)
1924, Feb. 12...Rt. Hon. J. Ramsay MacDonald (S.)
1924, Nov. 4...Rt. Hon. S. Baldwin (C.)
1929 ...Rt. Hon. J. Ramsay MacDonald (S.)
1935, June 7...Rt. Hon. S. Baldwin (C.)
1937, May 28...Rt. Hon. Neville Chamberlain (C.)

PARLIAMENTS SINCE 1835.

Assembled.	Dissolved.	Duration.			Majority.	Assembled.	Dissolved.	Duration.			Majority.
		Yrs.	m.	d.				Yrs.	m.	d.	
Feb., 1835	July, 1837	2	4	28	—	Aug., 1892	July, 1895	2	11	5	40
Nov., 1837	June, 1841	3	7	8	—	Aug., 1895	Sept., 1900	5	1	13	152
Aug., 1841	July, 1847	5	11	4	—	Dec., 1900	Dec., 1905	5	0	1	134
Nov., 1847	July, 1852	4	7	13	1	Feb., 1906	Jan., 1910	3	10	29	356
Nov., 1852	Mar., 1857	4	4	17	13	Feb., 1910	Nov., 1910	0	9	13	124
Apl., 1857	Apl., 1859	1	11	23	79	Jan., 1911	Dec., 1918	7	11	0	126
May, 1859	July, 1865	6	1	6	43	Feb., 1919	Oct., 1922	3	8	22	263
Feb., 1866	Nov., 1868	2	9	10	67	May, 1923	Jan., 1924	0	8	0	—
Dec., 1868	Jan., 1874	5	1	16	128	Feb., 1924	Nov., 1924	0	10	0	225
Mar., 1874	Mar., 1880	6	0	20	46	Dec., 1924	May, 1929	4	5	4	211
Apl., 1880	Nov., 1885	5	6	20	62	July, 1929	Aug., 1931	2	1	0	—
Jan., 1886	June, 1886	0	5	14	166	Oct., 1931	Oct., 1935	3	11	29	499
Aug., 1886	June, 1892	5	10	24	114	Nov., 1935	—		—		247

CHIEF SOVEREIGNS AND RULERS.

When Born and Date of Accession.

Country.	Name.	Title.	Born.	Accession.
Belgium	Leopold III	King	Nov. 3, 1901	Feb. 18, 1934
Bulgaria	Boris III	Tsar	Jan. 30, 1894	Oct. 4, 1918
Denmark	Christian X	King	Sept. 26, 1870	May 14, 1912
France	M. Lébrun	President	Aug. 29, 1871	May 10, 1932
Germany	Adolf Hitler	Führer	Apr. 20, 1889	Aug. 2, 1934
Great Britain	George VI	King	Dec. 14, 1895	Dec. 11, 1936
Greece	George II	King	July 20, 1890	Nov. 1935
Hungary	N. Von Horthy	Regent	June 28, 1868	Mar. 1, 1920
Italy	Victor Emmanuel III	King	Nov. 11, 1869	July 29, 1900
Japan	Horohito	Emperor	Apr. 29, 1901	1927
Netherlands	Wilhemina	Queen	Aug. 31, 1880	Nov. 23, 1890
Portugal	A. de F. Carmona	President	Nov. 24, 1869	Mar. 25, 1928
Spain	M. Azana	President	1880	May 10, 1936
Sweden	Gustavus V	King	June 16, 1858	Dec. 8, 1907
Norway	Haakon VII	King	Aug. 3, 1872	Nov. 18, 1909
Turkey	Kemâl Atatürk	President	1881	Oct. 29, 1923
United States	Franklin Roosevelt	President	Jan. 30, 1882	Mar. 4, 1933

FESTIVALS, ANNIVERSARIES, etc., 1939.

Epiphany	Jan. 6	Ascension Day	May 18
Septuagesima Sunday	Feb. 5	Whit Sunday	May 28
Quinquagesima Sunday	Feb. 19	Bank Holiday	May 29
Ash Wednesday	Feb. 22	Trinity Sunday	June 4
St. David	Mar. 1	Corpus Christi	June 8
St. Patrick	Mar. 17	Bank Holiday	Aug. 7
Good Friday	Apr. 7	St. Andrew	Nov. 30
Easter Sunday	Apr. 9	St. Thomas	Dec. 21
Bank Holiday	Apr. 10	Christmas Day	Dec. 25
St. George	Apr. 23	Bank Holiday	Dec. 26

ECLIPSES.

In the year 1939 there will be four Eclipses, two of the Sun and two of the Moon :—

1. An annular eclipse of the Sun on April 19, visible as partial eclipse at Greenwich.
2. A total eclipse of the Moon on May 3, invisible at Greenwich.
3. A total eclipse of the Sun on October 12, invisible at Greenwich.
4. A partial eclipse of the Moon on October 28, partly visible at Greenwich.

The year 1358 of the Mohammedan Era begins at sunset on February 20, 1939.

The year 5700 of the Jewish Era begins at sunset on September 13, 1939.

QUARTER DAYS.

England.		Scotland.	
Lady Day	Mar. 25	Candlemas	Feb. 2
Midsummer Day	June 24	Spring Quarter	May 15
Michaelmas Day	Sept. 29	Lammas	Aug. 1
Christmas Day	Dec. 25	Martinmas	Nov. 11

Summer Time commences April 16, 1939, 2 a.m. (G.M.T.).

Summer Time ends October 8, 1939, 2 a.m. (G.M.T.).

HOLIDAYS.

England.		Scotland.	
Good Friday	Apr. 7	New Year's Day	Jan. 1
Easter Monday	Apr. 10	Good Friday	Apr. 7
Whit Monday	May 29	First Monday of May	May 1
First Monday of August	Aug. 7	First Monday of August	Aug. 7
Christmas Day	Dec. 25	Christmas Day	Dec. 25
Boxing Day	Dec. 26		

1939 JANUARY 31 Days

BREEDERS' TABLE.

Date on which an animal served or an egg set on any day of present month is due to give birth or hatch

Days of Month	Days of Week	Days to end of year	Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
			Dec.	Oct.	May	April	March	Jan.	Jan.	Jan.	Jan.
1	Su	364	3	8	28	23	5	31	29	22	19
								Feb.			
2	M	363	4	9	29	24	6	1	30	23	20
3	Tu	362	5	10	30	25	7	2	31	24	21
									Feb.		
4	W	361	6	11	31	26	8	3	1	25	22
					June						
5	Th	360	7	12	1	27	9	4	2	26	23
6	F	359	8	13	2	28	10	5	3	27	24
7	S	358	9	14	3	29	11	6	4	28	25
8	Su	357	10	15	4	30	12	7	5	29	26
						May					
9	M	356	11	16	5	1	13	8	6	30	27
10	Tu	355	12	17	6	2	14	9	7	31	28
										Feb.	
11	W	354	13	18	7	3	15	10	8	1	29
12	Th	353	14	19	8	4	16	11	9	2	30
13	F	352	15	20	9	5	17	12	10	3	31
											Feb.
14	S	351	16	21	10	6	18	13	11	4	1
15	Su	350	17	22	11	7	19	14	12	5	2
16	M	349	18	23	12	8	20	15	13	6	3
17	Tu	348	19	24	13	9	21	16	14	7	4
18	W	347	20	25	14	10	22	17	15	8	5
19	Th	346	21	26	15	11	23	18	16	9	6
20	F	345	22	27	16	12	24	19	17	10	7
21	S	344	23	28	17	13	25	20	18	11	8
22	Su	343	24	29	18	14	26	21	19	12	9
23	M	342	25	30	19	15	27	22	20	13	10
24	Tu	341	26	31	20	16	28	23	21	14	11
				Nov.							
25	W	340	27	1	21	17	29	24	22	15	12
26	Th	339	28	2	22	18	30	25	23	16	13
27	F	338	29	3	23	19	31	26	24	17	14
							April				
28	S	337	30	4	24	20	1	27	25	18	15
29	Su	336	31	5	25	21	2	28	26	19	16
			Jan.					March			
30	M	335	1	6	26	22	3	1	27	20	17
31	Tu	334	2	7	27	23	4	2	28	21	18

THE SUN.

Rises.	Sets.
1—8. 6 a.m. ...	4. 1 p.m.
8—8. 5 a.m. ...	4. 9 p.m.
15—8. 0 a.m. ...	4.19 p.m.
22—7.54 a.m. ...	4.30 p.m.
29—7.44 a.m. ...	4.43 p.m.

THE MOON.

Sets	2.46 a.m.	Rises	12.31 p.m.
,,	9.11 a.m.	,,	8.15 p.m.
Rises	3.33 a.m.	Sets	12.51 p.m.
,,	8.14 a.m.	,,	6.59 p.m.
Sets	1.38 a.m.	Rises	11. 6 a.m.

PHASES OF MOON.

5th Full Moon	9.30 p.m.
12th Last Quarter	1.10 p.m.
20th New Moon	1.27 p.m.
28th First Quarter	3. 0 p.m.

A New Year's Resolution. Use THORLEY'S SPECIALITIES for all Stock.

DIARY AND CASH ACCOUNT FOR JANUARY, 1939.

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1939 FEBRUARY 28 Days

BREEDERS' TABLE.

Days of Month	Days of Week	Days to end of year	Date on which an animal served or an egg set on any day of present month is due to give birth or hatch								
			Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
			Jan.	Nov.	June	May	April	March	March	Feb.	Feb.
1	W	333	3	8	28	24	5	3	1	22	19
2	Th	332	4	9	29	25	6	4	2	23	20
3	F	331	5	10	30	26	7	5	3	24	21
					July						
4	S	330	6	11	1	27	8	6	4	25	22
5	**Su**	329	7	12	2	28	9	7	5	26	23
6	M	328	8	13	3	29	10	8	6	27	24
7	Tu	327	9	14	4	30	11	9	7	28	25
										March	
8	W	326	10	15	5	31	12	10	8	1	26
						June					
9	Th	325	11	16	6	1	13	11	9	2	27
10	F	324	12	17	7	2	14	12	10	3	28
											March
11	S	323	13	18	8	3	15	13	11	4	1
12	**Su**	322	14	19	9	4	16	14	12	5	2
13	M	321	15	20	10	5	17	15	13	6	3
14	Tu	320	16	21	11	6	18	16	14	7	4
15	W	319	17	22	12	7	19	17	15	8	5
16	Th	318	18	23	13	8	20	18	16	9	6
17	F	317	19	24	14	9	21	19	17	10	7
18	S	316	20	25	15	10	22	20	18	11	8
19	**Su**	315	21	26	16	11	23	21	19	12	9
20	M	314	22	27	17	12	24	22	20	13	10
21	Tu	313	23	28	18	13	25	23	21	14	11
22	W	312	24	29	19	14	26	24	22	15	12
23	Th	311	25	30	20	15	27	25	23	16	13
				Dec.							
24	F	310	26	1	21	16	28	26	24	17	14
25	S	309	27	2	22	17	29	27	25	18	15
26	**Su**	308	28	3	23	18	30	28	26	19	16
							May				
27	M	307	29	4	24	19	1	29	27	20	17
28	Tu	306	30	5	25	20	2	30	28	21	18

THE SUN.

Rises.	Sets.
5—7.34 a.m. ...	4.56 p.m.
12—7.22 a.m. ...	5. 8 p.m.
19—7.9 a.m. ...	5.21 p.m.
26—6.54 a.m. ...	5.33 p.m.

THE MOON.

Sets	7.37 a.m.	Rises	7. 5 p.m.
Rises	2.24 a.m.	Sets	11.12 a.m.
,,	6.42 a.m.	,,	5.55 p.m.
Sets	12.34 a.m.	Rises	9.45 a.m.

PHASES OF MOON.

4th Full Moon	7.55 a.m.
11th Last Quarter	4.12 a.m.
19th New Moon	8.28 a.m.
27th First Quarter	3.26 a.m.

THORLEY'S FOOD will increase the quantity of Milk in Suckling Ewes and the Lambs will benefit.

DIARY AND CASH ACCOUNT FOR FEBRUARY, 1939.

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1939 MARCH 31 Days

BREEDERS' TABLE.

Days of Month	Days of Week	Days to end of year	Date on which an animal served or an egg set on any day of present month is due to give birth or hatch								
			Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
1	W	305	Jan. 31	Dec. 6	July 26	June 21	May 3	March 31	March 29	March 22	March 19
2	Th	304	Feb. 1	7	27	22	4	April 1	30	23	20
3	F	303	2	8	28	23	5	2	31	24	21
4	S	302	3	9	29	24	6	3	April 1	25	22
5	Su	301	4	10	30	25	7	4	2	26	23
6	M	300	5	11	31	26	8	5	3	27	24
7	Tu	299	6	12	Aug. 1	27	9	6	4	28	25
8	W	298	7	13	2	28	10	7	5	29	26
9	Th	297	8	14	3	29	11	8	6	30	27
10	F	296	9	15	4	30	12	9	7	31	28
11	S	295	10	16	5	July 1	13	10	8	April 1	29
12	Su	294	11	17	6	2	14	11	9	2	30
13	M	293	12	18	7	3	15	12	10	3	31
14	Tu	292	13	19	8	4	16	13	11	4	April 1
15	W	291	14	20	9	5	17	14	12	5	2
16	Th	290	15	21	10	6	18	15	13	6	3
17	F	289	16	22	11	7	19	16	14	7	4
18	S	288	17	23	12	8	20	17	15	8	5
19	Su	287	18	24	13	9	21	18	16	9	6
20	M	286	19	25	14	10	22	19	17	10	7
21	Tu	285	20	26	15	11	23	20	18	11	8
22	W	284	21	27	16	12	24	21	19	12	9
23	Th	283	22	28	17	13	25	22	20	13	10
24	F	282	23	29	18	14	26	23	21	14	11
25	S	281	24	30	19	15	27	24	22	15	12
26	Su	280	25	31	20	16	28	25	23	16	13
27	M	279	26	Jan. 1	21	17	29	26	24	17	14
28	Tu	278	27	2	22	18	30	27	25	18	15
29	W	277	28	3	23	19	31	28	26	19	16
30	Th	276	29	4	24	20	June 1	29	27	20	17
31	F	275	March 1	5	25	21	2	30	28	21	18

THE SUN.

Rises.	Sets.
5—6.39 a.m. ...	5.46 p.m.
12—6.24 a.m. ...	5.57 p.m.
19—6. 8 a.m. ...	6.10 p.m.
26—5.52 a.m. ...	6.22 p.m.

THE MOON.

Sets	6. 2 a.m.	Rises	5.54 p.m.
Rises	1.10 a.m.	Sets	9.54 a.m.
,,	5. 8 a.m.	,,	4.49 p.m.
,,	8.30 a.m.	,,	——

PHASES OF MOON.

5th Full Moon	6. 0 p.m.
12th Last Quarter	9.37 p.m.
21st New Moon	1.49 a.m.
28th First Quarter	12.16 p.m.

THORLEY'S PIG POWDERS will be useful as a tonic restorative for Pigs of all ages.

DIARY AND CASH ACCOUNT FOR MARCH, 1939.

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1939 APRIL 30 Days

BREEDERS' TABLE.

Days of Month	Days of Week	Days to end of year	Date on which an animal served or an egg set on any day of present month is due to give birth or hatch								
			Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
			March	Jan.	Aug.	July	June	May	April	April	April
1	S	274	2	6	26	22	3	1	29	22	19
2	Su	273	3	7	27	23	4	2	30	23	20
3	M	272	4	8	28	24	5	3	May 1	24	21
4	Tu	271	5	9	29	25	6	4	2	25	22
5	W	270	6	10	30	26	7	5	3	26	23
6	Th	269	7	11	31	27	8	6	4	27	24
7	F	268	8	12	Sept. 1	28	9	7	5	28	25
8	S	267	9	13	2	29	10	8	6	29	26
9	Su	266	10	14	3	30	11	9	7	30	27
10	M	265	11	15	4	31	12	10	8	May 1	28
11	Tu	264	12	16	5	Aug. 1	13	11	9	2	29
12	W	263	13	17	6	2	14	12	10	3	30
13	Th	262	14	18	7	3	15	13	11	4	May 1
14	F	261	15	19	8	4	16	14	12	5	2
15	S	260	16	20	9	5	17	15	13	6	3
16	Su	259	17	21	10	6	18	16	14	7	4
17	M	258	18	22	11	7	19	17	15	8	5
18	Tu	257	19	23	12	8	20	18	16	9	6
19	W	256	20	24	13	9	21	19	17	10	7
20	Th	255	21	25	14	10	22	20	18	11	8
21	F	254	22	26	15	11	23	21	19	12	9
22	S	253	23	27	16	12	24	22	20	13	10
23	Su	252	24	28	17	13	25	23	21	14	11
24	M	251	25	29	18	14	26	24	22	15	12
25	Tu	250	26	30	19	15	27	25	23	16	13
26	W	249	27	31	20	16	28	26	24	17	14
27	Th	248	28	Feb. 1	21	17	29	27	25	18	15
28	F	247	29	2	22	18	30	28	26	19	16
29	S	246	30	3	23	19	July 1	29	27	20	17
30	Su	245	31	4	24	20	2	30	28	21	18

THE SUN.

Rises.	Sets.
2—5.36 a.m. ...	6.33 p.m.
9—5.20 a.m. ...	6.45 p.m.
16—6. 5 a.m. ...	7.57 p.m.
23—5.50 a.m. ...	8. 8 p.m.
30—5.36 a.m. ...	8.19 p.m.

THE MOON.

Sets	4.28 a.m.	Rises	4.47 p.m.
,,	8.35 a.m.	,,	——
Rises	4.34 a.m.	Sets	4.42 p.m.
,,	8.18 a.m.	,,	——
Sets	3.56 a.m.	Rises	4.46 p.m.

PHASES OF MOON.

4th Full Moon	4.18 a.m.
11th Last Quarter	4.11 p.m.
19th New Moon	5.35 p.m.
26th First Quarter	7.25 p.m

The above times are expressed in Summer Time where applicable.

During the heavy spring tillage work THORLEY'S FOOD will keep the Horses fit

DIARY AND CASH ACCOUNT FOR APRIL, 1939.

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1939 MAY 31 Days

BREEDERS' TABLE.

Date on which an animal served or an egg set on any day of present month is due to give birth or hatch

Days of Month	Days of Week	Days to end of year	Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
1	M	244	April 1	Feb. 5	Sept. 25	Aug. 19	July 1	May 31	May 29	May 22	May 19
2	Tu	243	2	6	26	20	2	June 1	30	23	20
3	W	242	3	7	27	21	3	2	31	24	21
4	Th	241	4	8	28	22	4	3	June 1	25	22
5	F	240	5	9	29	23	5	4	2	26	23
6	S	239	6	10	30	24	6	5	3	27	24
7	Su	238	7	11	Oct. 1	25	7	6	4	28	25
8	M	237	8	12	2	26	8	7	5	29	26
9	Tu	236	9	13	3	27	9	8	6	30	27
10	W	235	10	14	4	28	10	9	7	31	28
11	Th	234	11	15	5	29	11	10	8	June 1	29
12	F	233	12	16	6	30	12	11	9	2	30
13	S	232	13	17	7	31	13	12	10	3	31
14	Su	231	14	18	8	Sept. 1	14	13	11	4	June 1
15	M	230	15	19	9	2	15	14	12	5	2
16	Tu	229	16	20	10	3	16	15	13	6	3
17	W	228	17	21	11	4	17	16	14	7	4
18	Th	227	18	22	12	5	18	17	15	8	5
19	F	226	19	23	13	6	19	18	16	9	6
20	S	225	20	24	14	7	20	19	17	10	7
21	Su	224	21	25	15	8	21	20	18	11	8
22	M	223	22	26	16	9	22	21	19	12	9
23	Tu	222	23	27	17	10	23	22	20	13	10
24	W	221	24	28	18	11	24	23	21	14	11
25	Th	220	25	29	19	12	25	24	22	15	12
26	F	219	26	March 1	20	13	26	25	23	16	13
27	S	218	27	2	21	14	27	26	24	17	14
28	Su	217	28	3	22	15	28	27	25	18	15
29	M	216	29	4	23	16	29	28	26	19	16
30	Tu	215	30	5	24	17	30	29	27	20	17
31	W	214	May 1	6	25	18	31	30	28	21	18

THE SUN.

Rises.	Sets.
7—5.23 a.m. ...	8.31 p.m.
14—5.11 a.m. ...	8.42 p.m.
21—5. 1 a.m. ...	8.53 p.m.
28—4.53 a.m. ...	9. 2 p.m.

THE MOON.

Sets	8.17 a.m.	——	
Rises	2.59 a.m.	Sets	3.32 p.m.
,,	7. 8 a.m.	,,	11.11 p.m.
Sets	2.27 a.m.	Rises	3.48 p.m.

PHASES OF MOON.

3rd Full Moon	4.15 p.m.
11th Last Quarter	11.40 a.m.
19th New Moon	5.25 a.m.
26th First Quarter	12.20 a.m.

The above times are expressed in Summer Time.

Many of the Dairy Show winners have been fed on THORLEY RATIONS.

DIARY AND CASH ACCOUNT FOR MAY, 1939.

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1939 JUNE 30 Days

BREEDERS' TABLE.

Date on which an animal served or an egg set on any day of present month is due to give birth or hatch

Days of Month	Days of Week	Days to end of year	Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
			May	March	Oct.	Sept.	Aug.	July	June	June	June
1	Th	213	2	7	26	19	1	1	29	22	19
2	F	212	3	8	27	20	2	2	30	23	20
									July		
3	S	211	4	9	28	21	3	3	1	24	21
4	Su	210	5	10	29	22	4	4	2	25	22
5	M	209	6	11	30	23	5	5	3	26	23
6	Tu	208	7	12	31	24	6	6	4	27	24
					Nov.						
7	W	207	8	13	1	25	7	7	5	28	25
8	Th	206	9	14	2	26	8	8	6	29	26
9	F	205	10	15	3	27	9	9	7	30	27
										July	
10	S	204	11	16	4	28	10	10	8	1	28
11	Su	203	12	17	5	29	11	11	9	2	29
12	M	202	13	18	6	30	12	12	10	3	30
						Oct.					July
13	Tu	201	14	19	7	1	13	13	11	4	1
14	W	200	15	20	8	2	14	14	12	5	2
15	Th	199	16	21	9	3	15	15	13	6	3
16	F	198	17	22	10	4	16	16	14	7	4
17	S	197	18	23	11	5	17	17	15	8	5
18	Su	196	19	24	12	6	18	18	16	9	6
19	M	195	20	25	13	7	19	19	17	10	7
20	Tu	194	21	26	14	8	20	20	18	11	8
21	W	193	22	27	15	9	21	21	19	12	9
22	Th	192	23	28	16	10	22	22	20	13	10
23	F	191	24	29	17	11	23	23	21	14	11
24	S	190	25	30	18	12	24	24	22	15	12
25	Su	189	26	31	19	13	25	25	23	16	13
				April							
26	M	188	27	1	20	14	26	26	24	17	14
27	Tu	187	28	2	21	15	27	27	25	18	15
28	W	186	29	3	22	16	28	28	26	19	16
29	Th	185	30	4	23	17	29	29	27	20	17
30	F	184	31	5	24	18	30	30	28	21	18

THE SUN.

Rises.	Sets.
4—4.47 a.m. ...	9. 9 p.m.
11—4.43 a.m. ...	9.15 p.m.
18—4.42 a.m. ...	9.19 p.m.
25—4.43 a.m. ...	9.21 p.m.

THE MOON.

Sets	7. 2 a.m.	Rises	10.51 p.m.
Rises	1.24 a.m.	Sets	2.21 p.m.
,,	5.56 a.m.	,,	9.51 p.m.
Sets	12.59 a.m.	Rises	2.52 p.m.

PHASES OF MOON.

2nd Full Moon	4.11 a.m.
10th Last Quarter	5. 7 a.m.
17th New Moon	2.37 p.m.
24th First Quarter	5.35 a.m.

The above times are expressed in Summer Time.

THORLEY'S HAY SPICE improves rain-damaged hay if mixed at the time of stacking.

DIARY AND CASH ACCOUNT FOR JUNE, 1939.

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1939 JULY 31 Days

BREEDERS' TABLE.

Date on which an animal served or an egg set on any day of present month is due to give birth or hatch

Days of Month	Days of Week	Days to end of year	Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
			June	April	Nov.	Oct.	Aug.	July	July	July	July
1	S	183	1	6	25	19	31	31	29	22	19
							Sept.	Aug.			
2	**Su**	182	2	7	26	20	1	1	30	23	20
3	M	181	3	8	27	21	2	2	31	24	21
									Aug.		
4	Tu	180	4	9	28	22	3	3	1	25	22
5	W	179	5	10	29	23	4	4	2	26	23
6	Th	178	6	11	30	24	5	5	3	27	24
					Dec.						
7	F	177	7	12	1	25	6	6	4	28	25
8	S	176	8	13	2	26	7	7	5	29	26
9	**Su**	175	9	14	3	27	8	8	6	30	27
10	M	174	10	15	4	28	9	9	7	31	28
										Aug.	
11	Tu	173	11	16	5	29	10	10	8	1	29
12	W	172	12	17	6	30	11	11	9	2	30
13	Th	171	13	18	7	31	12	12	10	3	31
						Nov.					Aug.
14	F	170	14	19	8	1	13	13	11	4	1
15	S	169	15	20	9	2	14	14	12	5	2
16	**Su**	168	16	21	10	3	15	15	13	6	3
17	M	167	17	22	11	4	16	16	14	7	4
18	Tu	166	18	23	12	5	17	17	15	8	5
19	W	165	19	24	13	6	18	18	16	9	6
20	Th	164	20	25	14	7	19	19	17	10	7
21	F	163	21	26	15	8	20	20	18	11	8
22	S	162	22	27	16	9	21	21	19	12	9
23	**Su**	161	23	28	17	10	22	22	20	13	10
24	M	160	24	29	18	11	23	23	21	14	11
25	Tu	159	25	30	19	12	24	24	22	15	12
				May							
26	W	158	26	1	20	13	25	25	23	16	13
27	Th	157	27	2	21	14	26	26	24	17	14
28	F	156	28	3	22	15	27	27	25	18	15
29	S	155	29	4	23	16	28	28	26	19	16
30	**Su**	154	30	5	24	17	29	29	27	20	17
			July								
31	M	153	1	6	25	18	30	30	28	21	18

THE SUN.

Rises.	Sets.
2—4.47 a.m. ...	9.20 p.m.
9—4.53 a.m. ...	9.16 p.m.
16—5. 0 a.m. ...	9.11 p.m.
23—5. 9 a.m. ...	9. 3 p.m.
30—5.19 a.m. ...	8.53 p.m.

THE MOON.

Sets	5.51 a.m.	Rises	9.25 p.m.
——		Sets	1.12 p.m.
Rises	4.44 a.m.	,,	8.26 p.m.
,,	1.55 p.m.	——	
Sets	4.44 a.m.	Rises	7.59 p.m.

PHASES OF MOON.

1st Full Moon	5.16 p.m.
9th Last Quarter	8.49 p.m.
16th New Moon	10. 3 p.m.
23rd First Quarter	12.34 p.m.
31st Full Moon	7.37 a.m.

The above times are expressed in Summer Time.

For producing Eggs nothing equals OVUM, THORLEY'S POULTRY CONDIMENT.

DIARY AND CASH ACCOUNT FOR JULY, 1939.

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1939 AUGUST 31 Days

BREEDERS' TABLE.

Days of Month	Days of Week	Days to end of year	Date on which an animal served or an egg set on any day of present month is due to give birth or hatch								
			Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
1	Tu	152	July 2	May 7	Dec. 26	Nov. 19	Oct. 1	Aug. 31	Aug. 29	Aug. 22	Aug. 19
2	W	151	3	8	27	20	2	Sept. 1	30	23	20
3	Th	150	4	9	28	21	3	2	31	24	21
4	F	149	5	10	29	22	4	3	Sept. 1	25	22
5	S	148	6	11	30	23	5	4	2	26	23
6	**Su**	147	7	12	31	24	6	5	3	27	24
7	M	146	8	13	Jan. 1	25	7	6	4	28	25
8	Tu	145	9	14	2	26	8	7	5	29	26
9	W	144	10	15	3	27	9	8	6	30	27
10	Th	143	11	16	4	28	10	9	7	31	28
11	F	142	12	17	5	29	11	10	8	Sept. 1	29
12	S	141	13	18	6	30	12	11	9	2	30
13	**Su**	140	14	19	7	Dec. 1	13	12	10	3	31
14	M	139	15	20	8	2	14	13	11	4	Sept. 1
15	Tu	138	16	21	9	3	15	14	12	5	2
16	W	137	17	22	10	4	16	15	13	6	3
17	Th	136	18	23	11	5	17	16	14	7	4
18	F	135	19	24	12	6	18	17	15	8	5
19	S	134	20	25	13	7	19	18	16	9	6
20	**Su**	133	21	26	14	8	20	19	17	10	7
21	M	132	22	27	15	9	21	20	18	11	8
22	Tu	131	23	28	16	10	22	21	19	12	9
23	W	130	24	29	17	11	23	22	20	13	10
24	Th	129	25	30	18	12	24	23	21	14	11
25	F	128	26	31	19	13	25	24	22	15	12
26	S	127	27	June 1	20	14	26	25	23	16	13
27	**Su**	126	28	2	21	15	27	26	24	17	14
28	M	125	29	3	22	16	28	27	25	18	15
29	Tu	124	30	4	23	17	29	28	26	19	16
30	W	123	31	5	24	18	30	29	27	20	17
31	Th	122	Aug. 1	6	25	19	31	30	28	21	18

THE SUN.

Rises.	Sets.
6—5.30 a.m. ...	8.41 p.m.
13—5.41 a.m. ...	8.28 p.m.
20—5.51 a.m. ...	8.15 p.m.
27—6. 3 a.m. ...	8. 0 p.m.

THE MOON.

Sets	12. 5 p.m.	Rises	10.45 p.m.
Rises	3.32 a.m.	Sets	6.58 p.m.
,,	12.51 p.m.	,,	10.38 p.m.
Sets	3.38 a.m.	Rises	6.31 p.m.

PHASES OF MOON.

8th Last Quarter	10.18 a.m.
15th New Moon	4.53 a.m.
21st First Quarter	10.21 p.m.
29th Full Moon	11. 9 p.m.

The above times are expressed in Summer Time.

Fattening Lambs improve wonderfully when given a sprinkling of THORLEY'S FOOD with their Cake and Meal.

DIARY AND CASH ACCOUNT FOR AUGUST, 1939.

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1939 SEPTEMBER 30 Days

BREEDERS' TABLE.

Days of Month	Days of Week	Days to end of year	Date on which an animal served or an egg set on any day of present month is due to give birth or hatch								
			Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
			Aug.	June	Jan.	Dec.	Nov.	Oct.	Sept.	Sept.	Sept.
1	F	121	2	7	26	20	1	1	29	22	19
2	S	120	3	8	27	21	2	2	30	23	20
3	**Su**	119	4	9	28	22	3	3	Oct. 1	24	21
4	M	118	5	10	29	23	4	4	2	25	22
5	Tu	117	6	11	30	24	5	5	3	26	23
6	W	116	7	12	31	25	6	6	4	27	24
7	Th	115	8	13	Feb. 1	26	7	7	5	28	25
8	F	114	9	14	2	27	8	8	6	29	26
9	S	113	10	15	3	28	9	9	7	30	27
10	**Su**	112	11	16	4	29	10	10	8	Oct. 1	28
11	M	111	12	17	5	30	11	11	9	2	29
12	Tu	110	13	18	6	31	12	12	10	3	30
13	W	109	14	19	7	Jan. 1	13	13	11	4	Oct. 1
14	Th	108	15	20	8	2	14	14	12	5	2
15	F	107	16	21	9	3	15	15	13	6	3
16	S	106	17	22	10	4	16	16	14	7	4
17	**Su**	105	18	23	11	5	17	17	15	8	5
18	M	104	19	24	12	6	18	18	16	9	6
19	Tu	103	20	25	13	7	19	19	17	10	7
20	W	102	21	26	14	8	20	20	18	11	8
21	Th	101	22	27	15	9	21	21	19	12	9
22	F	100	23	28	16	10	22	22	20	13	10
23	S	99	24	29	17	11	23	23	21	14	11
24	**Su**	98	25	30	18	12	24	24	22	15	12
25	M	97	26	July 1	19	13	25	25	23	16	13
26	Tu	96	27	2	20	14	26	26	24	17	14
27	W	95	28	3	21	15	27	27	25	18	15
28	Th	94	29	4	22	16	28	28	26	19	16
29	F	93	30	5	23	17	29	29	27	20	17
30	S	92	31	6	24	18	30	30	28	21	18

THE SUN.

Rises.	Sets.
3—6.14 a.m. ...	7.44 p.m.
10—6.25 a.m. ...	7.28 p.m.
17—6.36 a.m. ...	7.13 p.m.
24—6.47 a.m. ...	6.56 p.m.

THE MOON.

Sets	11. 2 a.m.	Rises	9.17 p.m.
Rises	2.25 a.m.	Sets	5.28 p.m.
,,	11.42 a.m.	,,	9.12 p.m.
Sets	2.32 a.m.	Rises	5. 0 p.m.

PHASES OF MOON.

6th Last Quarter	9.24 p.m.
13th New Moon	12.22 p.m.
20th First Quarter	11.34 a.m.
28th Full Moon	3.27 p.m.

The above times are expressed in Summer Time.

The pastures have lost their feeding value, but THORLEY'S FOOD will increase the flow of milk.

DIARY AND CASH ACCOUNT FOR SEPTEMBER, 1939.

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1939 OCTOBER 31 Days

BREEDERS' TABLE.

Days of Month	Days of Week	Days to end of year	Date on which an animal served or an egg set on any day of present month is due to give birth or hatch								
			Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
			Sept.	July	Feb.	Jan.	Dec.	Oct.	Oct.	Oct.	Oct.
1	**Su**	91	1	7	25	19	1	31	29	22	19
								Nov.			
2	M	90	2	8	26	20	2	1	30	23	20
3	Tu	89	3	9	27	21	3	2	31	24	21
									Nov.		
4	W	88	4	10	28	22	4	3	1	25	22
5	Th	87	5	11	29	23	5	4	2	26	23
					March						
6	F	86	6	12	1	24	6	5	3	27	24
7	S	85	7	13	2	25	7	6	4	28	25
8	**Su**	84	8	14	3	26	8	7	5	29	26
9	M	83	9	15	4	27	9	8	6	30	27
10	Tu	82	10	16	5	28	10	9	7	31	28
										Nov.	
11	W	81	11	17	6	29	11	10	8	1	29
12	Th	80	12	18	7	30	12	11	9	2	30
13	F	79	13	19	8	31	13	12	10	3	31
						Feb.					Nov.
14	S	78	14	20	9	1	14	13	11	4	1
15	**Su**	77	15	21	10	2	15	14	12	5	2
16	M	76	16	22	11	3	16	15	13	6	3
17	Tu	75	17	23	12	4	17	16	14	7	4
18	W	74	18	24	13	5	18	17	15	8	5
19	Th	73	19	25	14	6	19	18	16	9	6
20	F	72	20	26	15	7	20	19	17	10	7
21	S	71	21	27	16	8	21	20	18	11	8
22	**Su**	70	22	28	17	9	22	21	19	12	9
23	M	69	23	29	18	10	23	22	20	13	10
24	Tu	68	24	30	19	11	24	23	21	14	11
25	W	67	25	31	20	12	25	24	22	15	12
				Aug.							
26	Th	66	26	1	21	13	26	25	23	16	13
27	F	65	27	2	22	14	27	26	24	17	14
28	S	64	28	3	23	15	28	27	25	18	15
29	**Su**	63	29	4	24	16	29	28	26	19	16
30	M	62	30	5	25	17	30	29	27	20	17
			Oct.								
31	Tu	61	1	6	26	18	31	30	28	21	18

THE SUN.

Rises.		Sets.
1—6.59 a.m.	...	6.40 p.m.
8—6.10 a.m.	...	5.25 p.m.
15—6.22 a.m.	...	5. 9 p.m.
22—6.34 a.m.	...	4.54 p.m.
29—6.46 a.m.	...	4.40 p.m.

THE MOON.

Sets	9.59 a.m.	Rises	7.52 p.m.
Rises	1.22 a.m.	Sets	2.59 p.m.
,,	9.30 a.m.	,,	6.46 p.m.
Sets	12.24 a.m.	Rises	2.27 p.m.
,,	7.54 a.m.	,,	5.28 p.m.

PHASES OF MOON.

6th Last Quarter	6.27 a.m.
12th New Moon	8.30 p.m.
20th First Quarter	3.24 a.m.
28th Full Moon	6.42 a.m.

Summer time ends October 8th at 2 a.m.

DIARY AND CASH ACCOUNT FOR OCTOBER, 1939.

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1939 NOVEMBER 30 Days

BREEDERS' TABLE.

Date on which an animal served or an egg set on any day of present month is due to give birth or hatch

Days of Month	Days of Week	Days to end of year	Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
			Oct.	Aug.	March	Feb.	Jan.	Dec.	Nov.	Nov.	Nov.
1	W	60	2	7	27	19	1	1	29	22	19
2	Th	59	3	8	28	20	2	2	30	23	20
									Dec.		
3	F	58	4	9	29	21	3	3	1	24	21
4	S	57	5	10	30	22	4	4	2	25	22
5	**Su**	56	6	11	31	23	5	5	3	26	23
					April						
6	M	55	7	12	1	24	6	6	4	27	24
7	Tu	54	8	13	2	25	7	7	5	28	25
8	W	53	9	14	3	26	8	8	6	29	26
9	Th	52	10	15	4	27	9	9	7	30	27
										Dec.	
10	F	51	11	16	5	28	10	10	8	1	28
11	S	50	12	17	6	29	11	11	9	2	29
						March					
12	**Su**	49	13	18	7	1	12	12	10	3	30
											Dec.
13	M	48	14	19	8	2	13	13	11	4	1
14	Tu	47	15	20	9	3	14	14	12	5	2
15	W	46	16	21	10	4	15	15	13	6	3
16	Th	45	17	22	11	5	16	16	14	7	4
17	F	44	18	23	12	6	17	17	15	8	5
18	S	43	19	24	13	7	18	18	16	9	6
19	**Su**	42	20	25	14	8	19	19	17	10	7
20	M	41	21	26	15	9	20	20	18	11	8
21	Tu	40	22	27	16	10	21	21	19	12	9
22	W	39	23	28	17	11	22	22	20	13	10
23	Th	38	24	29	18	12	23	23	21	14	11
24	F	37	25	30	19	13	24	24	22	15	12
25	S	36	26	31	20	14	25	25	23	16	13
				Sept.							
26	**Su**	35	27	1	21	15	26	26	24	17	14
27	M	34	28	2	22	16	27	27	25	18	15
28	Tu	33	29	3	23	17	28	28	26	19	16
29	W	32	30	4	24	18	29	29	27	20	17
30	Th	31	31	5	25	19	30	30	28	21	18

THE SUN.

Rises.	Sets.
5—6.58 a.m. ...	4.28 p.m.
12—7.11 a.m. ...	4.17 p.m.
19—7.23 a.m. ...	4. 7 p.m.
26—7.35 a.m. ...	3.59 p.m.

THE MOON.

——		Sets	1.32 p.m.
Rises	8.16 a.m.	,,	5.21 p.m.
,,	12.54 p.m.	——	
Sets	6.46 a.m.	Rises	4. 4 p.m.

PHASES OF MOON.

4th Last Quarter	1.12 p.m.
11th New Moon	7.54 a.m.
18th First Quarter	11.21 p.m.
26th Full Moon	9.54 p.m.

THORLEY'S PERFECTION POULTRY MEAL will bring the Pullets on to lay.

DIARY AND CASH ACCOUNT FOR NOVEMBER, 1939.

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1939 DECEMBER 31 Days

BREEDERS' TABLE.

Date on which an animal served or an egg set on any day of present month is due to give birth or hatch

Days of Month	Days of Week	Days to end of year	Mare 48 weeks	Cow 40 weeks	Ewe and Goat 21 weeks	Sow 16 weeks	Bitch 9 weeks	Goose and Rabbit 30 days	Turkey, Duck, Peafowl 28 days	Fowl 21 days	Pigeon 18 days from last Egg
			Nov.	Sept.	April	March	Jan.	Dec.	Dec.	Dec.	Dec.
1	F	30	1	6	26	20	31	31	29	22	19
							Feb.	Jan.			
2	S	29	2	7	27	21	1	1	30	23	20
3	**Su**	28	3	8	28	22	2	2	31	24	21
									Jan.		
4	M	27	4	9	29	23	3	3	1	25	22
5	Tu	26	5	10	30	24	4	4	2	26	23
					May						
6	W	25	6	11	1	25	5	5	3	27	24
7	Th	24	7	12	2	26	6	6	4	28	25
8	F	23	8	13	3	27	7	7	5	29	26
9	S	22	9	14	4	28	8	8	6	30	27
10	**Su**	21	10	15	5	29	9	9	7	31	28
										Jan.	
11	M	20	11	16	6	30	10	10	8	1	29
12	Tu	19	12	17	7	31	11	11	9	2	30
						April					
13	W	18	13	18	8	1	12	12	10	3	31
											Jan.
14	Th	17	14	19	9	2	13	13	11	4	1
15	F	16	15	20	10	3	14	14	12	5	2
16	S	15	16	21	11	4	15	15	13	6	3
17	**Su**	14	17	22	12	5	16	16	14	7	4
18	M	13	18	23	13	6	17	17	15	8	5
19	Tu	12	19	24	14	7	18	18	16	9	6
20	W	11	20	25	15	8	19	19	17	10	7
21	Th	10	21	26	16	9	20	20	18	11	8
22	F	9	22	27	17	10	21	21	19	12	9
23	S	8	23	28	18	11	22	22	20	13	10
24	**Su**	7	24	29	19	12	23	23	21	14	11
25	M	6	25	30	20	13	24	24	22	15	12
				Oct.							
26	Tu	5	26	1	21	14	25	25	23	16	13
27	W	4	27	2	22	15	26	26	24	17	14
28	Th	3	28	3	23	16	27	27	25	18	15
29	F	2	29	4	24	17	28	28	26	19	16
30	S	1	30	5	25	18	29	29	27	20	17
			Dec.				March				
31	**Su**	0	1	6	26	19	1	30	28	21	18

THE SUN.

Rises.	Sets.
3—7.45 a.m. ...	3.54 p.m.
10—7.53 a.m. ...	3.51 p.m.
17—8. 0 a.m. ...	3.52 p.m.
24—8. 4 a.m. ...	3.55 p.m.
31—8. 6 a.m. ...	4. 0 p.m.

THE MOON.

Sets 12. 5 p.m. Rises 11.46 p.m.
Rises 7. 3 a.m. Sets 3.59 p.m.
,, 11.21 a.m. ,, 11. 3 p.m.
Sets 5.32 a.m. Rises 2.41 p.m.
,, 10.39 a.m. ,, 10.52 p.m.

PHASES OF MOON.

3rd Last Quarter	8.40 p.m.
10th New Moon	9.45 p.m.
18th First Quarter	9. 4 p.m.
26th Full Moon	11.28 a.m.

Milk is too valuable to waste now, but Calves will thrive equally well on LACTIFER.

DIARY AND CASH ACCOUNT FOR DECEMBER, 1939.

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YOUR STOCK GOES UP

in weight and yield WITH

Thorley's Food

INCLUDED IN THEIR RATION

This ensures perfect digestion and assimilation of all food, thus giving maximum results from a minimum of food.

Write for booklet on Thorley's Food to :–

JOSEPH THORLEY LTD.

KING'S CROSS - LONDON, N.1

Established 1848

THORLEY'S Food is not a food in itself but **The Condiment** for inclusion with the Rations fed to All Stock.

It has been an essential on the farm since 1848 because of its many uses.

Every farmer should have a supply by him, not only "in case of need" but for regular use in improving stock and increasing yields.

THE GAIN IS MANY TIMES THE COST.

Write for descriptive literature to

Joseph Thorley Ltd., King's Cross, London, N.1

A DANISH NATIONAL AGRICULTURAL EXHIBITION.

By G. B. Hony.

DENMARK, as we know it to-day, is a land of smallholders ; but 150 years ago it was a country of big manors, run by peasants who were unable to leave them and who had to do certain work for the lord of the manor. It was to celebrate the 150th anniversary of the abolition of villeinage that the Danish National Agricultural Exhibition—to which I had the honour of being invited—was held in Copenhagen in 1938.

Although Denmark has many small agricultural shows every year, no national show has been held since 1900 ; and the event, therefore, attracted a very great deal of attention. It differed in many respects from an agricultural show as we know it ; for it combined an exhibition of livestock and machinery with a historical display showing the progress of Danish farming during the past 150 years. That, in fact, was the keynote underlying the whole exhibition.

There was a remarkable series of models of Danish farms of 150 and 50 years ago and of to-day ; each with its buildings and surrounding fields growing the appropriate crops. Up till fifty years ago Denmark was a corn-growing country, but with the increase in corn growing abroad she wisely turned over to livestock and livestock products. More than that, she selected her markets and then concentrated on supplying those markets with exactly the produce they demanded. And that is why Danish bacon, butter and eggs have achieved such a high position in our domestic economy.

This change-over in methods of farming was obvious throughout the show ; and the Danes are certainly past masters in the art of graphic display. An actual old-time farmhouse, with its implements and machinery, was contrasted with a modern smallholding of the latest type with its implements and livestock. An old village smithy was next door to a modern one run by electricity. A collection of curious old implements, including a hand-operated milking machine of 1862, was housed alongside their modern equivalents. And so on and so forth. Undoubtedly this historical and educational part of the show was very well done.

The livestock section also differed from our ordinary shows, for the animals entered had all been carefully selected by

committees of judges to represent the best from each province. There was no question of an owner sending any animal he liked. We were thus able to see the pick of Danish livestock, and the different breeds were present in the same proportion as they exist throughout the country.

Thus the predominating cattle breed was the Danish red milch cattle ; a mahogany coloured almost dual-purpose type, which averages about 700 gallons of milk with 4 per cent. of butter fat. This breed accounts for 60 per cent. of the Danish cattle population, and was represented at the show by about 480 animals.

The next most important breed is the black and white Jutland ; this is actually Denmark's oldest national breed, but it is giving way to the Danish red. Related to the black and white cattle of northern Germany and Holland, it is of a heavier type than our Friesians. Some 160 of these cattle were entered in the show. Then there were about 100 Shorthorns, the only beef breed in Denmark, but a breed which is also losing ground to-day.

Founded on English and Scotch animals introduced seventy or eighty years ago, milking qualities have only recently been given much importance. But it was interesting to notice that many of the leading animals had the blood of well-known English dairy Shorthorns in their pedigrees.

Incidentally, the judges—of whom there were four or five for each class—made no attempt to place the animals in definite order. Any animal reaching a certain standard received a gold, silver or bronze medal, so that there were often several gold medals in one class.

The pigs, which naturally formed a most important section of the show, were nearly all—480 out of 520—of the Danish Landrace breed, the others being Large Whites. Danish bacon has made much headway in our markets because it is always of uniform quality. It is true that this is mainly due to the wonderful organisation of the factories, which ensures that the right type of side is sent to each centre of distribution ; but we must also give the Danish breeder the credit of concentrating on one type of pig ; and the examples on show at the exhibition certainly had length, depth, good hams and under-lines and light shoulders—all those qualities so much sought after by the curers.

The implement yard was specially interesting, for it contained many types unfamiliar over here. Especially prominent were the vast numbers of small threshing machines, driven by electricity or oil engines, with drums of from one foot in width upwards and costing from about £26. Most of these had its own straw baler attached, thus showing that even the small Danish farmer considers it worth while to bale his straw—even though it be for use on his own holding. I was also impressed with the small one-horse steerage drills suitable for use with either corn or root seeds ; with the extreme lightness of the ploughs ; and with the large number of grinding mills—mostly with stones, and not steel grinding plates. In fact, the implements were mainly of a type to appeal to the small man, who has no spare horse or tractor power, who utilises all his available land, and who grows corn rather to feed at home than to sell—in other words, to the typical Danish farmer of to-day.

LIME DISTRIBUTION.

THE large quantities of various forms of lime now being used make it very necessary to ensure that steps are taken to obtain efficient distribution.

In the course of the survey of certain parishes which has been undertaken lately it has become evident that in some cases dressings of chalk applied a few years ago, in large lumps, and ploughed in at once, have not yet become thoroughly mixed with the soil, and in consequence have not given their full effect.

It is very important that chalk should lie on the top of the soil long enough to become broken up to small pieces. The time required for this depends upon the original hardness of the chalk, and upon the weather. In some cases it may be so soft as to break down almost at once after passing a roll and harrow over it.

Where the chalk is hard a lengthy period of weathering, including frost, is necessary. Harrowing, in order to spread it about, is very important, especially where a small dressing is given. Sugar-beet lime sludge, if spread about and allowed to dry, becomes very friable, and if then rolled and harrowed, may be distributed most effectively—probably almost as well as ground carbonate of lime.

If in mid-March one sees wheat growing on land which had received sugar-beet lime sludge on the clover layer in the autumn before ploughing, the worm castings are often whitish and obviously consist largely of sugar-beet lime sludge. Thus, natural agencies co-operate with man in mixing up materials in the soil.

Ground quicklime and ground carbonate of lime should be harrowed into the soil immediately after application, if this can be done. Otherwise, when heavy rain falls they (especially ground quicklime) are apt to become caked on the surface, particularly if a heavy dressing has been applied. If this caking takes place the good which has been done by grinding—an expensive process—is undone, the material having actually gone back into lumps.

HOW WEEDS ARE SPREAD.

ARABLE land weeds are spread, and propagate themselves, in many ways. A large number do this by way of seed. The seed may be wind-borne, as in the case of thistle, groundsel and dandelion. Or again, other seed is projected from the parent plant by the seed vessel splitting open, often with great force. Weeds are spread in other ways such as by heavy rains, which wash the seed away from the parent plant ; and contact with animals, as in the case of corn buttercup and goosegrass (known to some as " sticky willie ") the seeds attaching themselves to the clothes of human beings, or the wool and hair of animals.

Birds and farm animals are also well-known spreaders of weeds. This is generally brought about by seeds being passed, undestroyed, through the alimentary tract of the animal. Some people hold the view that all seeds are destroyed when passed through the animal, but stocksmen who have fed whole grain to cattle or horses know how much of this can emerge undigested and undestroyed.

ROTATIONAL CHANGE.

THE outstanding rotational change in the last two decades has been the greater emphasis on cereals, which over large areas now occupy two-thirds, as against the pre-war one-half, of the arable acreage. As yet this change has not, in general, led to any serious consequences, but there is

evidence that the group of diseases variously termed Take-All, Foot-Rot, or Whiteheads is becoming more prevalent. Various fungi may produce these diseases, and they need careful watching, because economic forces are urging the farmers to grow as much wheat as possible, and that is the cereal which is most susceptible.

Unfortunately, barley is also susceptible (oats being practically immune), but where barley follows wheat the disease may be checked by ploughing the wheat stubble directly after harvest, so allowing some six months in which much of the fungus will die. This is a well-recognised detail of good farming.

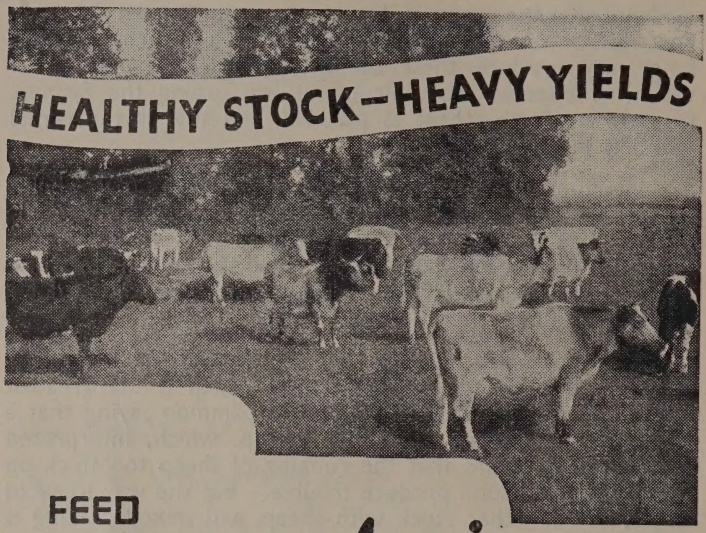
With stock also it is the routine of good farming rather than the methods of the pathologist which is the greatest safeguard against disease. There is a common saying that a sheep's worst enemy is another sheep, which, interpreted into practice, means that the running of sheep too thick on the ground will soon produce trouble. But the way to avoid this is to run other stock with sheep, and mixed grazing is recognised as leading to maximum productivity of a pasture.

The new folding methods with pigs and poultry could be justified by their potentialities as improvers of poor pasture, but there is also no better way of controlling many of the diseases of these species.

It is now being urged on all sides, and for many reasons, that the alternate husbandry system of farming should be widely extended, and, though the change cannot be made rapidly, there is already a movement in that direction. It seems certain that this will be regarded as a normal part of good farming in the near future, and the system stands pre-eminent as a general means of checking diseases and pests of crops and stock.

A GOAT'S GREAT ACHIEVEMENT.

IT is truly remarkable a statement to say that a goat can yield just as much milk in a year's lactation as a cow, but this statement was substantiated in great style in 1937, when a British Alpine goat created a world's record milk yield by giving 5,479 lbs. of milk in her recently completed lactation, improving on the previous record by 159 lbs.



FEED

Thorley's

DAIRY RATIONS

AND MAKE SURE OF BOTH.

THE unrivalled quality of Thorley's Dairy Rations has long proved itself in the pail and in the condition of the milker.

DAIRY CAKE-A-BITS. These are the great standby of Thorley users in the Dairy world. They represent the soundest, reliable food at an economic price.

SPECIAL DAIRY CAKE-A-BITS. The premier food for the deep milker and cows giving a high percentage of butter fats.

BOTH THE ABOVE ARE OBTAINABLE IN MEAL FORM.

QUALITY IN FEEDING STUFFS.

IN the old days animals were fed on whatever happened to be available. Then came the scientist, who taught farmers that to get the best results from their stock the rations fed should be properly "balanced," i.e., that they should contain the right proportions of proteins and carbohydrates. Next the rations fed were divided into two parts, one for the maintenance of condition and the other for the production of milk or meat, and scales were laid down showing exactly how much food was required for the production of each gallon of milk and so forth.

But when scientific rationing first came into force, both the scientists and farmers were inclined to concentrate on chemical analyses with the result that quality was too often overlooked. It is a fact that a ration with an analysis which looks extremely good on paper can be made up of very inferior ingredients, and there is no doubt that some manufacturers took advantage of this fact to supply compound feeding stuffs of very doubtful value. And that is why many authorities used to advise farmers to mix their own rations rather than to buy compound cakes and meals. But the leading firms, such as Messrs. Joseph Thorley, always recognised that quality was all-important, and farmers who dealt with such firms have always received better value than they could get by attempting to compound their own feeding stuffs.

To-day, not only every scientist but every intelligent farmer realises the importance of quality. To quote Sir John Orr: "A slight difference between two diets, which can neither be detected by the eye, nor determined by chemical analysis may be so important that it may mean the difference between life and death in the animals to which they are fed." This may be putting the case rather strongly, but the fact remains that some feeding stuffs have a far greater value than others, even though their chemical composition may be identical. Our knowledge of this subject is still admittedly far from complete, and experiments are still being carried out all over the world, but the wise feeder is he who takes the fullest possible advantage of the results obtained by such experiments—in other words, who feeds his stock on the rations scientifically compounded for his benefit by a manufacturer of repute, whose reputation depends on the *quality* of his products, as proved by the *results* obtained by his customers.

THE MILK AND DAIRIES ORDER 1926.

REGISTRATION.—All cowkeepers and dairymen who sell milk must be registered with the Sanitary Authority; and before using any building as a cowshed or dairy, which has not previously been so used, one month's notice in writing must be given to the Authority.

HEALTH AND INSPECTION OF CATTLE.—A Veterinary Inspector may make an inspection of the cattle and require any cow to be milked in his presence. Milk may not be sold for human consumption from any cow which has given tuberculous milk or is suffering from emaciation due to tuberculosis, tuberculosis of the udder, acute inflammation of the udder, acute mastitis, actinomycosis of the udder; anthrax, foot and mouth disease, suppuration of the udder, any comatose condition, any septic condition of the uterus, or any infection of the udder or teats which is likely to convey disease.

CLEANLINESS OF DAIRIES AND PROTECTION OF MILK.—Every cowshed and building used for keeping milk must be adequately lighted and ventilated, and if used during the hours of darkness must be efficiently lighted artificially. All registered premises must be provided with an adequate water supply. Milk must not be put or kept in any place where it is liable to become contaminated or infected. Persons engaged in the milking of cows and the handling of milk must keep their clothing and persons in a cleanly condition, and all vessels and appliances used in connection with milk must at all times be kept in a state of thorough cleanliness.

CLEANSING OF COWSHEDS.—Every part of every cowshed must be thoroughly cleansed from time to time so that it is at all times reasonably clean and sweet. Dung, etc., must be removed at least once a day from a cowshed in which cows are milked. Cowshed floors must be constructed of such materials and in such a way as to render it practicable to remove all liquid matter that falls thereon.

MILKING.—Milking must be carried out in a proper light. The flanks, udders and teats of cows must be cleaned before milking, and the hands of the milker must be thoroughly washed and dried. All milking stools must be kept thoroughly clean and milk must be removed from the cowshed

or placed in a covered receptacle as soon as possible after milking. No dry or dusty material may be moved in a cowshed during milking, or within half an hour before the commencement of milking.

COOLING.—Milk must be cooled down to a temperature not more than 5 degrees Fahr. higher than that of the water supply, except when sold to the consumer twice daily on the day of production, converted into dairy products, or delivered by road to a collecting station.

CONVEYANCE OF MILK.—No churn or other receptacle may be used in the handling of milk the interior surface of which is not capable of being readily cleansed. Buyers of milk must thoroughly clean all churns and receptacles, other than bottles, before returning them. Churns, etc., containing milk dispatched by rail or road must have permanently marked on them the name and address of the owner and be provided with a lid without openings which will prevent the access to the milk of dirt, dust or rainwater. All practicable precautions must be taken to prevent unnecessary exposure of milk to heat or contamination.

MAINTAINING THE QUALITY OF MILK.

THE following general principles are suggested for application to aid in maintaining the quality of the milk : (1) Detect the individual cows yielding milk low in fat. (2) Milk at as equal intervals as possible. (3) Milk the heaviest yielders, or those showing greatest variation between morning and evening, last at night and first in the morning. (4) See that the milking and stripping are well done—keep daily milk records. (5) Give the cows adequate and balanced rations and have the cows in good condition at calving and keep them in good milking condition always. Thorley's Dairy Rations are unequalled for this purpose. (6) Mix the milk from several cows and "space" the cows in order of milking to avoid extremes of quality. (7) Take account of fat percentages in the selection of cows and of a stock bull.

DENTITION TABLES.

(FROM BENNETT'S AGRICULTURISTS' POCKET BOOK.)

HORSE.

Temporary Incisors	Age when cut	Temporary Molars	Age when cut
Central ...	Birth	1st, 2nd & 3rd	At or soon after birth
Lateral ...	4—8 weeks		
Corner ...	6—9 months		

Permanent Incisors	Age when cut	Permanent Molars	Age when cut
Central ...	2 y 6 m	4th	10 m—1 y
Lateral ...	3 y 6 m	5th	1 y 9 m—2 y
Corner ...	4 y 6 m	1st and 2nd ...	2 y 6 m—3 y
Tushes (not in mares)	4 y—4 y 6 m	3rd	3 y 6 m—3 y 9 m
		6th	4 y—4 y 6 m

SHEEP.

Temporary Incisors	Age when cut	Temporary Molars	Age when cut
Central, Intermediates, Lateral, Corner	At or soon after birth; 3—4 weeks	1st, 2nd & 3rd	At birth or a few weeks after

Permanent Incisors	Age when cut	Permanent Molars	Age when cut
Central ...	1 y 3 m	4th	—6 m
Intermediates	2 y	5th	9—12 m
Lateral ...	2 y 9 m	6th	1 y 6 m
Corner ...	3 y 3 m	1st and 2nd ...	2 y
		3rd	2 y 3 m—6 m

OX.

Temporary Incisors	Age when cut	Temporary Molars	Age when cut
Central, Intermediates, Lateral, Corner	At or soon after birth; 3—4 weeks	1st, 2nd & 3rd	At birth or from 3—4 weeks after

Permanent Incisors	Age when cut	Permanent Molars	Age when cut
Central ...	2 y	4th	6 m—9 m
Intermediates	2 y 9 m	5th	1 y 3 m
Lateral ...	3 y 3 m	6th	2 y—2 y 3 m
Corner ...	3 y 9 m	1st and 2nd ...	2 y 6 m—3 y
		3rd	3 y 3 m—3 y 6 m

No. of Temporary Teeth.	No. of Permanent Teeth.
Horse ... 4	40
Ox ... 20	32

PIG.

Temporary Incisors	Age when cut	Temporary Molars	Age when cut
Corner ...	At birth	1st, 2nd & 3rd	4—6 weeks after birth
Central ...	1—2 m		
Lateral ...	3 m		

Permanent Incisors	Age when cut	Permanent Molars	Age when cut
Corner ...	9—12 m	Premolars ...	6 m (irregular)
Central ...	12—15 m	4th Molar ...	6 m
Lateral ...	18—20 m	5th Molar ...	10—12 m
		1st, 2nd & 3rd	12—15 m
		6th	18 m

No. of Temporary Teeth.	No. of Permanent Teeth.
Sheep ... 20	32
Pig ... 28	34

MILK (SPECIAL DESIGNATIONS) ORDER 1936.

THE special designations which may be used in relation to milk are "Tuberculin Tested," "Accredited," and "Pasteurised." Licences authorising the use of one of these special designations must be obtained from the appropriate authority who may, if necessary, suspend or revoke the licence.

TUBERCULIN TESTED.—Every animal of the herd must be submitted to a tuberculin test at an interval of not less than two, and not more than six months, after the last preceding test. No animal may be added to the herd unless it has passed a tuberculin test within fourteen days before it is so added, or has come directly from an attested herd. All animals in the herd should be suitably marked for purposes of identification and a complete register kept. Every animal of the herd must be submitted to a veterinary examination at intervals of not more than six months, and any animal showing evidence of any disease shall be segregated from the rest of the herd. The herd must be completely isolated from all other cattle. The milk, unless bottled by the producer, shall be consigned in sealed containers marked with the day of production, and the words Tuberculin Tested Milk.

ACCREDITED.—Every milch cow belonging to the herd shall be submitted to a veterinary examination once in every three months. Any animal certified as showing evidence of any disease shall be segregated or removed from the herd. The herd shall not at any time contain any animal which to the knowledge of the producer has reacted to the tuberculin test. The milk, unless bottled by the producer, shall be consigned in sealed containers marked with the day of production, and the words Accredited Milk.

PASTEURISED.—Milk shall be retained at a temperature of not less than 145 degrees and not more than 150 degrees Fahr. for at least 30 minutes and be cooled to a temperature of not more than 55 degrees Fahr. Milk shall not be so heated more than once and shall not be otherwise treated by heat. The type of apparatus and thermometers used, and the methods employed shall be such as are satisfactory to the licensing authority. Temperature records shall be made and kept for at least a month. After the milk has been pasteurised it shall not be placed in any receptacles which are at any time used for milk which has not been pasteurised. Every vessel in which milk is transported or exposed for sale shall bear a suitable label with the words Pasteurised Milk.

IF YOU
"Lactifer rear" THEM
YOUR CALVES' FOOD COSTS ONLY
1½d A GALLON!

"Farmer & Stock-Breeder" photograph.

First introduced nearly sixty years ago. Thorley's Lactifer has remained the supreme calf food ever since. It is a perfect milk substitute ready cooked and easy to feed. Yet it costs only 1½d. per gallon and Lactifer reared calves never look back.

Obtainable from all corn merchants in bags of 112 lb., 56 lb., 28 lb. or 14 lb.

Write to
Joseph Thorley, Ltd., King's Cross, London, N.1 for Booklet.

LACTIFER THORLEY'S *Cooked* CALF MEAL

LACTIFER is the original Thorley's Cooked Calf Meal.

Its reputation now runs into five reigns and to-day it still stands as the first feed for the rearing of young calves.

Simple feeding instructions with each bag.

CALF REARING.

THE first essential in successful calf rearing is undoubtedly a well-bred, healthy calf. A badly bred malformed animal should be made into veal pies at a very early stage : it will never pay to rear. And yet it is surprising how many people will try to rear calves merely because they have picked them up cheap in the local market. But almost as important as the calf is the food on which it is to be reared. The ideal food is its own mother's milk, but, except in very special circumstances such as the rearing of valuable pedigree bulls, it can seldom pay nowadays to use new milk for calf-rearing. Fortunately, however, milk is not a necessity, for equally good results can be obtained by the use of Lactifer, Thorley's Cooked Calf Meal, and obtained at a third of the cost.

Whether a calf is to be reared on its mother or on Lactifer it is essential that it should have its own mother's milk for at least the first three days of its life. Some rearers like to let it suck for that time, others like to wean it straight away and rear it on the pail from the start. But the main point is that it should receive the colostrum or beastings, as the milk from the newly calved cow is called, since this is a natural aperient designed to purge the bowels of their foetal contents. If possible milk should always be given for the first couple of weeks, but Lactifer can be used after the first three days if necessary. Whichever plan is followed there are certain rules which must be adhered to if success is to be achieved. The pails must be absolutely clean ; feeding must be done at regular intervals ; and the food must always be given at the temperature of new milk. If any of these important points be neglected scouring is almost certain to follow, and the calf receives a set-back from which it may never really fully recover.

For the first two or three weeks it is better to give three meals a day than two, and the amount fed should vary with the individual calf's requirements. A big framed animal will

need more for its sustenance than a small one, and to allow it to go about half satisfied means that it will grow ravenous and bolt its meals with disastrous results. At a month old Lactifer should be supplemented by a little sweet hay between meals ; and a little solid food, which may consist of a handful of Thorley Cake mixed with crushed oats, put in the bottom of the pail after the Lactifer has been drunk. In this way the calf can be gradually turned over to solid food altogether, and will never experience that set-back which happens when the change is made too suddenly.

Spring calves can, with advantage, be turned out to grass for an hour or two a day, and even autumn and winter calves will benefit by having a run in a sunny yard whenever possible. But whatever happens calves must never be put on low-lying wet meadows, for on such land they are almost certain to be attacked by the worm which causes husk or hoose. Another point worth considering is the housing. Too often calves are crowded into dark and dirty sheds and kept on foul bedding. Clean, well-ventilated buildings are essential if the best result is to be obtained, and it has been truthfully affirmed that "disease and health are in the direct proportion of foul and pure air."

The practice of dry-feeding for calves has developed in recent years, and calf rearers who like to use this method will find that Calfum, Thorley's Dry Calf Food, will ensure good results. The system is economical as from start to finish the cost of Calfum is about from 1d. to 3d. per day per calf. Calves that are to be reared on this system must be provided with new milk for the first three or four weeks, after which Calfum is gradually introduced, and the quantity of milk reduced and replaced with warm water. By the fifth week about $\frac{3}{4}$ to 1 lb. of Calfum will be taken with water alone, and the quantity of Calfum should be gradually increased until at about 12 weeks the calf will be eating 2 lb. a day. From the time the calf commences to feed a little sweet hay should be given between meals.

SOME USEFUL DATA.

AVERAGE NORMAL TEMPERATURE, PULSE AND RESPIRATION.

	Temp.	Pulse beats per minute.	Respirations per minute.
Horse	100° F. to 101° F.	38—43	8—12
Cow	101° F. to 102° F.	50—60	12—16
Sheep	103° F. to 104° F.	70—80	15—30
Goat	102.5° F. to 104° F.	70—80	20—30
Pig (adult)	101° F. to 102° F.	80—90	15—25
Pig (young)	102° F. to 104° F.		
Dog	101° F. to 102° F.		
Rabbit	101° F. to 102° F.		
Cat	100.4° F. to 102° F.		
Fowl (average)	106° F. to 109° F.		
Duck	110° F. to 112° F.		
Small birds	108.6° F. to 110° F.		

The temperature, as taken with a thermometer, is an index of the heat of the body, and this even in the healthy animal varies within certain limits. The normal temperature is raised slightly after a meal, during rumination, lactation, and in pregnancy. Work also raises it, so that the normal temperature of the same animal may be slightly higher in the evening than in the morning. Young animals have a slightly higher normal temperature than old ones, and animals of ardent and sanguine temperament have a higher one than sluggish and phlegmatic ones.

ŒSTRUM (HEAT) PERIODS.

Animal.	Duration of Œstrum.	Return after Parturition.	Return if not Impregnated.
Mare	5-7 days	7-10 days	2-3 weeks or more
Cow	1 day	21-28 days	3-4 weeks or more
Ewe	1-2 days	4-6 months	17-20 days
Sow	2-4 days	5-6 weeks	20-21 days
Bitch	1-3 weeks	5-6 months	5-6 months

NOTIFIABLE DISEASES.

Under the Diseases of Animals Acts, 1894-1937, an outbreak of any of the following diseases must be at once notified to the Police :—

1. Cattle plague (rinderpest).
2. Pleuro-pneumonia.
3. Foot and mouth disease.
4. Swine fever (also known as typhoid fever, soldier purples, red disease, hog cholera, or swine plague).
5. Anthrax.
6. Sheep scab.
7. Sheep-pox.
8. Epizootic lymphangitis.
9. Glanders and farcy.
10. Parasitic mange.
11. Rabies.
12. Bovine tuberculosis (see Tuberculosis Order, 1938).

PERIODS OF INCUBATION OF DISEASE.

Foot and Mouth	2 to 5 days.
Swine Fever	4 to 7 days.
Anthrax	12 hours to 1 or 2 days.
Tuberculosis	14 days to several months.
Strangles	2 to 7 days.
Pleuro-pneumonia ...	3 weeks to 3 months.
Glanders and Farcy ...	1 to 6 weeks.

ROLLING TO CONTROL INSECT PESTS.

CORN crops are rolled chiefly in order to consolidate soil which has been "raised" by the frost, and so to bring the roots of the young plants in intimate contact with the soil. Rolling, however, is also a very useful measure in the case of the attacks on the plants by various insects, notably wireworms, wheat bulb fly, and leather jackets. The effect of the rolling in these cases is to prevent the pest from burrowing freely from one plant to the next, so that it has to confine its attacks to a smaller number of plants. It is also of great value—especially in the case of such a pest as the wheat bulb fly—by promoting early tillering. If a wheat plant has but one shoot the destruction of that shoot by a maggot endangers the life of the plant, but if it has three or four it can afford to lose one or two of them without suffering seriously in growth. The important point in rolling for the control of insect pests is to begin early enough, as soon as signs of a sick plant can be detected here and there in the field. It then assists the crop and hinders the pests before they have done much harm.

EFFECTIVE CONTROL OF WEEDS IN CEREALS.

SOME forty years ago a Frenchman introduced the method of destroying charlock by spraying infested cereal crops with a solution of copper sulphate; but very soon it was found that spraying with sulphuric acid was more effective, and this process is now the recognised means of controlling weeds such as charlock and wild radish in France, where over half a million acres are now so treated annually. For some reason or other, although sulphuric acid spraying spread to other European countries and America, it is only during the last seven years or so that it has begun to find a definite place in British agriculture. In 1931 some 200 acres were sprayed; last year some 30,000 acres were so treated.

In France spraying is usually done either by contractors or by "syndicats" or groups of four or five farmers in a village who buy a spraying machine between them and purchase their acid in bulk.

Most of the work over here is done by contractors, who provide the spraying machine, the acid, and a man to mix the acid and superintend the work, whilst the farmers provide the water, the horse or tractor, and the driver.

Comparatively few farmers own their own machines, and it has been found in the past that in many districts there has

been considerable difficulty in getting the work done, owing to the lack of contractors in the neighbourhood.

It would seem, therefore, that there is great scope for contractors, whether they be agents for fertilisers or ploughing and threshing contractors, to take up this work, for the process has come to stay and will undoubtedly be carried out more extensively year by year as farmers begin to appreciate its value.

SULPHURIC ACID SPRAYING.

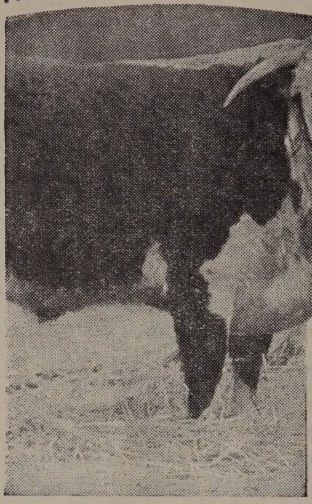
ALTHOUGH first introduced as a means of controlling weeds, during the last three or four years sulphuric acid spraying has also been used to kill off potato haulm preparatory to lifting the crop. The advantages of so doing are considerable. The acid shrivels up the haulm completely, thus enabling potato diggers to be used without waiting for the haulm to die down ; and in cases where crops are being grown for seed, growth can be stopped at the correct time —a practice which is becoming increasingly popular with the large seed-growers of Scotland. Even more important is the fact that, if crops are affected by late attacks of " blight," the disease can be prevented from infecting the tubers, and it has been found that, when clamps of potatoes which were sprayed with sulphuric acid are opened, " blights " are practically non-existent, even though there have been as many as 8 cwt. of " blights " per ton of ware from adjoining unsprayed areas.

Over 10,000 acres of potatoes were sprayed with sulphuric acid last year with satisfactory results.

There is yet one other use for sulphuric acid spraying, and that is in the prevention of the lodging of wheat due to the fungus *Cercosporella herpotrichoides*, which appears to be becoming increasingly prevalent in this country. Spraying with sulphuric acid not only kills off the fungus, but by reducing the amount of flag it helps the crop to stand.

We should be glad to supply full information about this process to any reader who writes to Messrs. Joseph Thorley, Ltd.

THORLEYS FATTENING RATION BUILDS CHAMPIONS



Universally Acknowledged
For Nearly Half a Century
as the
SUPREME RATION
for
FATTENING
STOCK

THORLEY'S has been the premier Fattening Cake since the earliest days of Balanced-compound feeding.

In its present form of Cake-a-bits (cubes) or meal, it meets the requirements of the modern farmer and still maintains its position as the foremost and thoroughly dependable feed in the production of high grade beef.

LOSSES DUE TO WARBLE FLY.

IT has been estimated that the losses due to warble fly amount to a million pounds sterling a year, and yet probably few farmers have in the past realised that warbles were causing loss to themselves. But when the butcher has to obtain a lower price for his hides—and the difference between a clean hide and a warbled hide may be as much as 5s.—he naturally tends to pay lower prices for the cattle. In the end it is, therefore, the farmer who suffers, even if unknowingly.

During the past year, however, the subject has been brought home forcibly to feeders of fat cattle, for the Livestock Commission instructed graders at the markets not to certify for "super-subsidy" cattle which are infested with warble grubs to such an extent that the flesh on the back where they appear is spoilt, and the value of the carcase depreciated. On this account some farmers have been deprived of the extra subsidy for cattle which were otherwise well up to the required standard. On a 12 cwt. bullock this makes a difference to the feeder of 30s.—an amount which may well represent the total profit on the beast. The Leather Sellers Company has long been advocating that farmers should dress their cattle against warbles, and in January, 1936, the Ministry of Agriculture brought in an Order which requires all visibly infected cattle to be treated with a dressing—the basis of which is powdered derris root—at intervals of not less than 27 days nor more than 32 days from the middle of March to the end of June ; or, alternatively, all ripe maggots must be removed by mechanical means, at least every ten days.

Since the warble fly does not travel far it should be quite easy to eradicate if only every farmer conscientiously carries out the Order, but feeders in the Eastern Counties, who buy stores from Wales and Ireland, are doubtful whether this Order is being properly carried out, and are urging that more effective steps should be taken to see that it is complied with in the rearing districts.

FAT CATTLE READY RECKONER.

Live Weight in Cwts. qrs. lbs.	30s. per Cwt. 3s. 9d. per 14 lb. Stone.	32s. per Cwt. 4s. per 14 lb. Stone.	34s. per Cwt. 4s. 3d. per 14 lb. Stone.	36s. per Cwt. 4s. 6d. per 14 lb. Stone.	38s. per Cwt. 4s. 9d. per 14 lb. Stone.	40s. per Cwt. 5s. per 14 lb. Stone.	42s. per Cwt. 5s. 3d. per 14 lb. Stone.	44s. per Cwt. 5s. 6d. per 14 lb. Stone.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
6 0 0	9 0 0	9 12 0	10 4 0	10 16 0	11 8 0	12 0 0	12 12 0	13 4 0
6 0 14	9 3 9	9 16 0	10 8 3	11 0 6	11 12 9	12 5 0	12 17 3	13 9 6
6 1 0	9 7 6	10 0 0	10 12 6	11 5 0	11 17 6	12 10 0	13 2 6	13 15 0
6 1 14	9 11 3	10 4 0	10 16 9	11 9 6	12 2 3	12 15 0	13 7 9	14 0 6
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7 1 14	11 1 3	11 16 0	12 10 9	13 5 6	14 0 3	14 15 0	15 9 9	16 4 6
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Carcass per Cwt.	52s. 6d.	56s. 0d.	59s. 6d.	63s. 0d.	66s. 6d.	70s. 0d.	73s. 6d.	77s. 0d.
per 8 lb. St. Value	3s. 9d.	4s. 0d.	4s. 3d.	4s. 6d.	4s. 9d.	5s. 0d.	5s. 3d.	5s. 6d.

RETURNS OF LIVE STOCK FOR ENGLAND AND WALES.

	1932.	1933.	1934.	1935.	1936.	1937.	1938.
	No.	No.	No.	No.	No.	No.	No.
Horses: Agricultural ...	655,100	645,600	596,300	586,400	561,400	554,800	561,600
,, Unbroken (including Stallions)	122,700	125,900	131,500	140,700	146,500	154,700	159,900
Other Horses...	139,300	131,100	157,800	146,700	157,700	149,200	134,100
Total	917,100	902,600	885,600	873,800	865,600	858,700	855,600
Cattle: Breeding Cows	2,871,500	2,955,200	2,995,200	3,051,100	3,076,100	3,067,900	3,071,500
,, 2 years and above ...	938,900	996,400	1,041,400	1,009,300	997,100	1,011,500	982,400
,, Under 2 years...	2,547,600	2,668,600	2,623,600	2,480,600	2,467,100	2,539,800	2,654,500
Total	6,358,000	6,620,200	6,660,200	6,541,000	6,540,300	6,619,200	6,708,400
Sheep: 1 year and over	10,587,700	10,191,900	9,011,000	8,881,500	8,906,500	8,807,300	10,055,500
,, Under 1 year ...	7,907,700	7,898,000	7,516,000	7,595,500	7,741,500	8,386,900	7,845,200
Total	18,495,400	18,089,900	16,527,000	16,477,000	16,648,000	17,194,200	17,900,700
Pigs	3,184,600	3,069,100	3,320,200	3,813,400	3,803,800	3,634,900	3,561,100

FEEDING STANDARDS—
RATIONS PER DAY PER 1,000 lb. LIVE WEIGHT.

Age (m'ths).	Live Weight. lb.	Total Dry Matter. lb.	Dig. True Prot. lb.	Starch Value. lb.
(1) Growing Cattle (Kellner Modified) :—				
(a) Future Milch Cows—				
2-3	158	23	3.0	18.5
3-6	300	24	2.4	14.7
6-12	500	26	1.8	12.5
12-18	700	26	1.5	10.5
18-24	900	26	1.3	9.2
(b) Future Fattening Beasts—				
2-3	160	23	4.0	19.5
3-6	330	24	3.0	14.7
6-12	550	26	2.3	14.4
12-18	770	26	1.8	11.2
18-24	950	26	1.4	10.0
(2) *Milch Cows :—				
(a) Dry Cows in Calf			.9	7.0
(b) Cows in Milk—				
(i) Maintenance only			.6	6.0
(ii) Production per gall. of milk			.6	2.25-2.5
(3) Fully Grown Fattening Cattle (Kellner) :—		24-32	1.5-1.7	12.5-14.5
(4) Working Horses (Kellner) :—				
Light work		18-23	1.0	9.2
Medium work		21-26	1.4	11.6
Heavy work		23-28	2.0	15.0

Age (m'ths).	Live Weight. lb.	Total Dry Matter. lb.	Dig. True Prot. lb.	Starch Value. lb.
(5) Lambs (Kellner) :—				
(a) Finer Breeds—				
5-6	60	27	3.0	16.4
6-8	75	25	2.5	13.0
8-11	80	23	1.8	10.7
11-15	90	22	1.5	10.2
15-20	100	22	1.2	9.7
(b) Coarser Breeds—				
5-6	65	28	4.5	17.2
6-8	80	27	3.5	15.4
8-11	100	26	2.5	13.8
11-15	120	25	2.0	11.4
15-20	150	24	1.5	10.2
(c) Fattening Lambs—				
6-7	65	31	3.5	17.0
7-9	88	30	3.0	16.0
9-11	110	28	2.5	15.0
(6) Fully Grown Sheep (Kellner) :—				
(a) Maintenance Diet Finer Breeds—		20-26	1.2	9.0
(b) Maintenance Diet Coarser Breeds—		18-23	1.0	8.3
(c) Fattening Sheep—		24-32	1.6	14.5

* Dry matter of maintenance and production ration together should not exceed 33 lb.

THE AGRICULTURAL HOLDINGS ACT, 1923.

On the determination of his tenancy, a farmer is able, under the provisions of the above Act, to obtain from his landlord, such compensation as fairly represents the value to the incoming tenant of certain specific improvements, if carried out by him.

Part I.

Improvements to which the previous Consent of the Landlord in writing must be obtained.

(1) Erection, alteration, or enlargement of buildings.

(2) Formation of silos.

(3) Laying down of permanent pasture.

(4) Making and planting of osier beds.

(5) Making of water meadows or works of irrigation.

(6) Making of gardens.

(7) Making or improvement of roads or bridges.

(8) Making or improvement of watercourses, ponds, wells, or reservoirs, or of works for the application of water power, or for supply of water for agricultural or domestic purposes.

(9) Making or removal of permanent fences.

(10) Planting of hops.

(11) Planting of orchards or fruit bushes.

(12) Protecting young fruit trees.

(13) Reclaiming of waste land.

(14) Warping or weiring of land.

(15) Embankments and sluices against floods.

(16) Erection of wirework in hop gardens.

(17) Provision of permanent sheep-dipping accommodation.

(18) In the case of arable land the removal of bracken, gorse, tree roots, boulders, or other like obstructions to cultivation.

Part II.

Improvement in respect of which Notice to Landlord is required

(19) Drainage.

Part III.

Improvement in respect of which Notice to or consent of Landlord is not required.

(20) Chalking of land.

(21) Clay-burning.

(22) Claying of land or spreading blaes upon land.

(23) Liming of land.

(24) Marling of land.

(25) Application to land of purchased artificial or other purchased manure.

(26) Consumption on the holding by cattle, sheep, or pigs, or by horses other than those regularly employed on the holding, of corn, cake, or other feeding stuff not produced on the holding.

(27) Consumption on the holding by cattle, sheep, or pigs, or by horses other than those regularly employed on the holding, of corn proved by satisfactory evidence to have been produced and consumed on the holding.

(28) Laying down temporary pasture with clover, grass, lucerne, sain-foin, or other seeds, sown more than two years prior to the termination of the tenancy (in so far as the value of the temporary pasture on the holding at the time of quitting exceeds the value of the temporary pasture on the holding at the commencement of the tenancy for which the tenant did not pay compensation).

(29) Repairs to buildings, being buildings necessary for the proper cultivation or working of the holding, other than repairs which the tenant is himself under an obligation to execute :

Provided that the tenant, before beginning to execute any such repairs, shall give to the landlord notice in writing of his intention, together with particulars of such repairs, and shall not execute the repairs unless the landlord fails to execute them within a reasonable time after receiving such notice.

HOW MONEY FOR IMPROVEMENTS CAN BE OBTAINED.

The Lands Improvement Co., which is incorporated by Special Acts of Parliament (1849-1920), advances money in the form of a long term loan for permanent improvements on estates and farms. Over £15,500,000 has already been advanced. Thousands of estates and farms have been brought up-to-date ; farmhouses and cottages have been erected or reconstructed ; cowsheds, dairies, covered yards and hay barns have been erected ; fixed sterilising and milk cooling plants installed ; great areas of land drained ; water and electricity brought to countless homes ; woodlands and orchards planted ; roads constructed ; gas and cold stores for fruit erected, etc.

Loans are for fixed periods and deposit of deeds is not required. A reduced rate of 3½ per cent. net interest is now available, and the net rate in force when the loan is granted cannot be increased. Write for particulars to the Lands Improvement Co., 58, Victoria Street, London, S.W.1.

OVUM
helps hens to lay when eggs are dear!
Include Ovum in the mash for increased returns. It ensures better assimilation—more eggs—better birds. Obtainable from merchants and corn dealers everywhere.
Write for booklet to:
JOSEPH THORLEY, LTD.,
KING'S CROSS, LONDON, N.1.
Est. 1848.
A Thorley PRODUCT

OVUM is a valuable addition to Poultry Rations at all times and is particularly useful in increasing egg production during the period when eggs are scarce and prices are good.

The cost is trifling compared with production results.

Feeding directions with each package.

SYSTEMS OF POULTRY KEEPING.

IN the old days fowls were kept in any sort of building ; the typical farm poultry quarters being a dark and completely unventilated shed, with six inches of manure on the floor. But in those days poultry counted for little on most farms, and were merely kept on sufferance, since they provided a certain amount of pocket money for the farmer's wife or daughters. Incidentally, if a proper record had been kept of the corn they consumed they probably mostly died in debt.

But after the war the general farmer began to realise that his poultry could be just as profitable as any other branch of the farm if the hens were properly looked after and carefully fed. Huge intensive houses were built, not only by general farmers but by specialist poultry farmers. In these hundreds of birds were housed, and kept confined year in year out. This " intensive " system was soon found to have considerable drawbacks, and was replaced by the " semi-intensive " system in which rather smaller houses were used for the same number of birds, which were however allowed a run out in addition. This system also had its drawbacks, for owing to the size of the houses they could not be moved, hence the birds were continually running on the same ground, with the result that it soon became foul : with disastrous results to the health of the stock.

Then came a period of running the poultry in smaller colony houses, scattered about the farm. This was a definite improvement, but the houses were still too large to be easily moved, and again the ground round them became foul.

In the meantime a point of supreme importance began to be realised : that poultry, when not kept on one patch too long, are unequalled as improvers of pasture land. And with the realisation of this fact came the beginning of the modern system—first introduced by the pioneer of open air milking bails, Mr. A. J. Hosier, of Wexcombe—of folding poultry over the land. The usual practice is to confine about twenty-five birds in a fold unit, consisting of roosting quarters with slatted floor to allow the manure to drop straight on to the land, and some eighty square feet of run, with nest boxes, mash hopper, etc. The whole unit is moved one step forward every day, so that the birds are continually on fresh ground, and the field receives a uniform dressing of manure all over.

Where this system is practised it is no uncommon sight to see a fleet of from 20 to 50 of these units at equal distances apart. This is probably the ideal method of keeping poultry on a general farm, particularly if the improvement to the pastures be taken into account. An alternative method of folding is to keep the birds in rather larger houses surrounded by wire netting, and to move the whole pen periodically.

Another system which has made considerable headway recently is the direct antithesis of the fold system. Here the birds are not only confined under cover, but are each kept in a separate cage. The system is known as the battery laying pen, for "batteries" of cages are placed tier upon tier, and many hundreds of birds can be kept in a very small space. In front of each cage is a receptacle for food and water, and the wire floor slopes so that all eggs laid roll to the front and are easily collected. The great advantage claimed for this system is that any hen which is not earning its keep can be eliminated at once. At first sight one would expect poor results, but in practice the birds look well and lay well when properly managed.

But whatever system is adopted, it is essential that the birds should be bred right and fed right if they are to yield a profit.

CHEAP AND GOOD LITTERS.

IT is surprising that more poultry-keepers who have the opportunity of obtaining wood shavings for nothing do not use them more frequently. Even if they have to be paid for the cost is only 2d. or 3d. for a very large sackful. Shavings spread out well, are light in colour, attractive to the birds, sweet-smelling, and a deterrent to insect pests.

Another litter which is not employed so often as it might be is coffee husk. This can be bought in most parts of the country at an extremely reasonable price, say about 27s. a ton, though it may be slightly cheaper or slightly dearer in other districts. It possesses all the good qualities of straw chaff; a good sample is free from dust and of even size—about $\frac{1}{4}$ in. diameter.

Peat moss is the most absorbent of all litters, for it can be left down for quite four times as long as, say, straw chaff, while it does much to keep insect pests at bay. Its chief faults are that it makes the house rather dark, covers everything

in the shed with a coating of dust, and the fowls do not like it very much. On the whole it is good. The cost is generally about 10s. 6d. a bale of 2 cwts.

Then there are dead leaves and bracken. These are both good, and when they can be gathered without too much trouble, they should certainly be used.

COCCIDIOSIS IN POULTRY.

COCCIDIOSIS is the cause of serious losses among chickens and turkeys. It may occasionally be met with in geese, ducks, pigeons, pheasants and peafowl. The acute form affects the chicks of poultry mainly between the second and tenth weeks of life, but it may occur as early as five or six days after hatching. An outbreak often causes a heavy and costly mortality on a farm. A more chronic form of the disease which causes equally serious losses may occur in birds from about 3-6 months of age. It is of the greatest importance to poultry farmers that such diseases should be correctly diagnosed at the earliest possible stage of an outbreak, if effective measures to stamp it out are to be taken. When losses occur, specimens should be sent to a veterinary laboratory for the diagnosis to be made.

Only in exceptional circumstances is it sound policy to treat poultry affected with any contagious disease, and all possible steps should be taken to eradicate it immediately it makes its first appearance in a flock. In outbreaks of coccidiosis, infection is borne through the contamination of land by adult carrier birds or by chicks which are survivors of a previously affected hatch. As prevention is better than cure, it is sound practice to set apart one piece of ground to be used solely for chick rearing, no adult birds being allowed on it. Steps should also be taken to prevent attendants carrying infection on their boots, clothing, implements, etc., from infected stock, or stock which is possibly infected, to young stock on clean ground.

The name and address of the nearest laboratory where poultry diseases are investigated can be obtained on application to the County Agricultural Organiser at the County Offices. An illustrated bulletin on "Some Diseases of Poultry" is published by the Ministry of Agriculture and may be obtained from H.M. Stationery Office, Kingsway, London, W.C.2, price 1s. 2d. post free.

MINISTRY OF AGRICULTURE AND FISHERIES.

Whitehall Place, S.W.1 ;

43, Parliament Street, S.W.1 ;

60, Strand, W.C.2 ;

Queen Anne's Chambers, Tothill Street, S.W.1 ;

and

King's Buildings, Smith Square, S.W.1.

The Ministry of Agriculture and Fisheries was constituted pursuant to the Ministry of Agriculture and Fisheries Act, 1919 (9 and 10 Geo. V, Ch. 91), which amended the Board of Agriculture and Fisheries Acts, 1899 to 1909. The Board of Agriculture for Great Britain was established in 1889. By the Board of Agriculture and Fisheries Act of 1903 the duties of the Fisheries Department of the Board of Trade were transferred to the Board of Agriculture, the designation of which was at the same time altered. The expression "agriculture" is defined to include "horticulture."

1. The Education and Research and Animal Health Divisions deal with agricultural research and education ; horticulture ; plant diseases and pests ; dairying ; poultry keeping ; educational propaganda ; diseases of animals ; and technical work in agriculture.

2. The Land Division is responsible for administering the Acts relating to the provision of small holdings and allotments. It deals with the administration of the Glebe Lands Act, the Universities and College Estates Acts, the Inclosure Acts, the Commons Acts, the Lands Improvement Acts, the Agricultural Holdings Acts, certain Tithe and Copyhold Acts, the Rats and Mice Destruction Act, and the Destructive Imported Animals Act. It has custody of complete sets of Ordnance Survey Maps of England, Wales and Scotland. It also deals with labour questions, including the administration of the Agricultural Wages (Regulation) Act, 1924, and the agricultural wages.

3. The Livestock and Publications and Commercial Divisions deal with questions relating to fertilisers, feeding stuffs and seeds. The former administers the Food and Drugs Acts and Merchandise Marks Acts, in so far as these affect agriculture. It also prepares the Journal of the Ministry, issues Press and wireless broadcast services, and deals with questions relating to livestock improvement and horse-breeding, and to the social and material improvement of village life, including rural industries, women's institutes and village clubs.

4. The Land Drainage Division deals with questions relating to land reclamation and administers the Land Drainage Acts.

5. The Establishment, Finance, Trade Relations and Statistical, Economics Intelligence and Markets Divisions are responsible for all general services of the Ministry, including staff and establishment registry, financial control and administration ; agricultural statistics and market prices ; the British Sugar (Subsidy) Act, 1925 ; questions relating to agricultural credit and co-operation ; and supply and marketing of agricultural produce.

6. The Fisheries Department is charged with powers and duties in England and Wales under the Sea Fisheries Regulation Acts, the Salmon and Freshwater Fisheries Act, the Cran Measures Act, 1908, the Herring Fisheries (Branding) Act, 1913, the Sea Fishing Industry Act, 1933, the Whaling Industry (Regulation) Act, 1934, the Herring Industry Act, 1935, and certain Acts relating to shell fisheries. It also conducts the English share of the International Fisheries Investigations in the North Sea and adjacent waters, and carries out independent research work.

The Administration of the Ordnance Survey and of Kew Gardens is under the control of the Ministry.

Estimates, 1938, £3,443,778.

Minister, The Rt. Hon. W. S. Morrison, M.C., K.C., M.P. ... £5,000

Private Secretaries, H. Meadows, J. Hensley, F. L. Wormald.

Parliamentary Private Secretary, I. L. Orr-Ewing, M.P.

Parliamentary Secretary, Earl of Feversham £1,500

Private Secretary, H. G. Lambert.

Permanent Secretary, Sir Donald Fergusson, K.C.B. ... £3,000

Private Secretary, A. B. Bartlett.

Second Secretary, D. E. Vandepeer £2,200

Private Secretary, L. S. Porter.

Fisheries Secretary, A. T. A. Dobson, C.V.O., C.B.E. ... £1,450 to £1,650

Chief Veterinary Officer, D. A. E. Cobot, M.R.C.V.S. ... £1,162 to £1,361

Chief Livestock Officer, P. A. Mytton ... ... £950 to £1,100

Poultry Commissioner, P. A. Francis, O.B.E. ... ... £848 to £1,059

Horticulture Commissioner, H. V. Taylor, O.B.E., D.Sc., A.R.C.S., V.M.H. ... ... £848 to £1,059

Director of Pathological Laboratory (Plant Diseases) J. C. F. Fryer, O.B.E., M.A. ... ... £954 to £1,162

Welsh Secretary, C. Bryner Jones, C.B., C.B.E. ... ... £1,450 to £1,650

Legal Adviser and Solicitor, A. D. Stocks, C.B., O.B.E. ... £1,500 to £1,800

Thorley's
SHEEP & LAMB CAKE-A-BITS
Maintains flow of milk in ewes and provides rapid growth in lambs.
A first-class feed for sheep of all grades.
followed by
FATTENING BAA-BITS
The foremost feed for sheep fattening
Obtainable from merchants everywhere.
JOSEPH THORLEY, LTD.
King's Cross, London, N.1.
Estd. 1848.

THIS represents a first-class feeding programme for the production of high grade fat lambs.

The Sheep and Lamb Cake-a-bits ensure a good flow of milk from the ewe and give the young lambs a fine start. The latter are then well finished by changing them over to Baa-bits at 8-10 weeks of age.

Baa-bits are simply our Fattening Ration in small cube form and are suitable for fattening calves as well as lambs and sheep.

Thorley's Lamb Food, is the name we give to our Lamb Ration carefully blended in the form of a mixed feed. It is manufactured for those who prefer this method of feeding.

EARLY LAMB.

FOR several years prior to 1938 sheep proved one of the most profitable branches of farming. But in 1938 prices slumped badly, and flock masters had a very poor season. The trouble was largely due to the large shipments from New Zealand which depressed prices of lamb so considerably. But the Minister of Agriculture has announced that shipments of frozen lamb are to be reduced by 400,000 cwt., and it is to be hoped that better prices will prevail.

Good as New Zealand lamb undoubtedly is, there is no real comparison between it and the *best* home produced lamb, hence there will always be a good market for the latter. The early lamb trade is, however, one which must be specially catered for and plans must be made months ahead. For very early lamb the breed par excellence is the Dorset Horn, either pure or crossed with a Down ram, for the ewes of this breed will lamb down in the early Autumn and with good management the lambs will be ready from Christmas onwards. But for the Easter trade breeds such as the Hampshire Down are eminently suitable.

The first essential in the production of early fat lambs is that they should be kept going from the very start. The ewes must have plenty of milk and must therefore have a good supply of both succulent food, such as roots and kale, and concentrates such as Thorley Cake-a-Bits. The quicker the lambs come to maturity, the better the quality, so the period of growth and fattening must be kept as short as possible. As soon as the lambs learn to eat, which they will do at a very early age, a creep should be provided so that they can get special food for themselves, for which nothing is better than Thorley Baabits.

It is worth remembering that the fat lamb trade is a luxury trade : quality is, therefore, the first essential. A young lamb thoroughly ripe, and of top quality, will make more money, and leave considerably more profit, than will an older and much heavier lamb lacking finish.

The fat lamb trade can be carried on on many farms where a regular breeding flock cannot conveniently be kept, and very often the ewes are sold off fat as well as the lambs. Hence high feeding can be practised to an extent which would be uneconomical in an ordinary breeding flock.

TAR-MARKING OF SHEEP.

IT appears that some farmers still continue the undesirable practice of tar-marking their sheep, and in view of the harm done to the fleece, and the difficulties caused to the wool manufacturer, the Ministry of Agriculture has again issued a warning against the method.

Two new marking materials have been produced as a result of experimental work carried out by theWool Industries Research Association, and their efficiency from the farmer's standpoint has been fully proved by tests both at home and abroad. The two preparations vary, but that recommended for use in this country is composed as follows :—

	Parts by Weight.
Wool fat	150
Carnauba wax	10
Barytes	70
Colour	17.5

White spirit to consistency.

If this material is used, no difficulty is experienced by the manufacturer when he comes to deal with the fleece and it is, therefore, very desirable that it should be substituted for tar on those farms where that substance is still used.

Guaranteed fluid made to the formulæ of the Research Association can only be obtained from duly authorised agents, and farmers who have been using tar, but desire now to improve the quality of their wool output, should apply, for any further information they want and for the names of supply agents, to the Wool Industries Research Association, Torridon, Headingley, Leeds.

FLAVOURED LAMB.

IN America a careful study has recently been made of the effects of feeds on the quality and palatability of lamb. The results confirm and amplify the opinion that definite taints in the meat are liable to arise from weeds in the food. It was found that wheat screenings, containing many hard weed seeds, when used as a concentrate always produced flabby flesh with a thin layer of greasy fat. The meat, moreover, had an objectionable flavour. However, one weed—tumbling mustard seed—gave exceptionally desirable meat. An important point found in this investigation was that a taint-producing weed spoilt the meat even when it was taken out of the ration sixty days before the lamb was sold.

AVERAGE PRICE OF WOOL PER LB. FROM 1902 to 1938.

Year	Leicester.	Half-breds.	South-down.	Lincoln.	White Cheviot.	Australian.	New Zealand.	South African.
	d. d.	d. d.	d. d.	d.	d. d.	d.	d.	d.
1902	5 to 5⅝	5⅝ to 6½	7⅛ to 9⅛	6¼	5¾ to 8½	8⅝	6⅛	7⅞
1903	7 ,, 7¾	8 ,, 8½	10 ,, 11	8	7 ,, 9	11	8	12
1904	8 ,, 8½	8½ ,, 9	11½ ,, 11¾	8¾	8 ,, 9½	12¾	9	13
1905	1¾	12½	13½	12	11¾ ,, 12	14¼	11	13
1906	13¾	14¼	15½	14	14½	14½	12	13½
1907	12	12½	15	12½	13½	14⅝	11	13
1908	17¼	12½	12½	7¾	9½	11¾	6	11½
1909	9½	11	14	9	11½	14	9	12
1910	10	11¾	14¼	9¼	12	15	10	12
1911	10¼	11¼	13¾	9¾	13	14	9½	12¾
1912	10¼	11	13½	9¾	13	13¾	9	11½
1913	12¾	13½	16	12½	14	15	10½	12
1914	12½	13¼	15½	12¼	14	15¼	10¾	12
1915	18	19	12	18	19	15	17	11
1916	Wool clip	purchased	by Government			23	25	21
1919	12¾	13¾	15½	12¼	14	50	40	38½
1920	49	46	50	48½	—	47	35	34½
1921	7	7½	11½	10		18	12	11½
1922	7¾ to 9¾	8½ to 11¼	17¾	7½	9¾ to 10½	30	15	16½
1923	10½ ,, 12¾	10½ ,, 15	20 ,, 25½	12¾	15 ,, 16¼	36	19	20
1924	17 ,, 19	18 ,, 25	33 ,, 37	18	16 ,, 21	42	24	23
1925	15 ,, 18	15 ,, 19	21 ,, 23	15	15 ,, 19	40	22	21
1926	13 ,, 15½	15 ,, 15½	20 ,, 21	15½	13½ ,, 15	40	22	22
1927	14 ,, 16½	16 ,, 17½	21 ,, 23	16½	15¼ ,, 15¾	40	22	22
1928	19½	20	28 ,, 29	19	21	43	23	22½
1929	16	18	21	16	18½	34	22	22½
1930	11	11	14½	11	12	21	11	11
1931	7½	6½	10½	7½	8	11	8½	9
1932	5½	5½	10	5	6½	10	7	8
1933	6½	7	12½	6½	8	13	9	11
1934	6½	7½	13½	6	9	12	8	9
1935	7	8	13	7	10½	13	8	11
1936	9	10 to 11	13½	9	11	14	9	13
1937	16½	17½ ,, 18	18½	16½	16½	17	14	17
1938	11½	12½	12½	11	10½	12½	9½	11½

TABLE OF INCOME OR WAGES.

Per Year	Per Month	Per Wk.	Per Day	Per Year	Per Month	Per Week	Per Day	Per Year	Per Month	Per Week	Per Day
£ s.	£ s. d.	s. d.	s. d.	£	£ s. d.	£ s. d.	s. d.	£	£ s. d.	£ s. d.	£ s. d.
8 0	0 13 4	3 1	0 5½	19	1 11 8	0 7 3¾	1 0½	130	10 16 8	2 9 11¾	0 7 1½
8 8	0 14 0	3 2¾	0 5¾	20	1 13 4	0 7 8¼	1 1¼	135	11 5 0	2 11 10¾	0 7 4¾
8 10	0 14 2	3 3¼	0 5¾	25	2 1 8	0 9 7¼	1 4½	140	11 13 4	2 13 10	0 7 8
9 0	0 15 0	3 5½	0 6	30	2 10 0	0 11 6½	1 7½	145	12 1 8	2 15 9	0 7 11½
9 9	0 15 9	3 7½	0 6½	35	2 18 4	0 13 5¾	1 10¾	150	12 10 0	2 17 8½	0 8 0¾
10 0	0 16 8	3 10½	0 6½	40	3 6 8	0 15 4¾	2 2¼	155	12 18 4	2 19 7½	0 8 6
10 10	0 17 6	4 0½	0 7	45	3 15 0	0 17 3¾	2 5½	160	13 6 8	3 1 6½	0 8 9¼
11 0	0 18 4	4 2¾	0 7½	50	4 3 4	0 19 2¾	2 9	165	13 15 0	3 3 5½	0 9 0¼
11 11	0 19 3	4 5¼	0 7½	55	4 11 8	1 1 1¾	2 12¼	170	14 3 4	3 5 4¾	0 9 4
12 0	1 0 0	4 7½	0 8	60	5 0 0	1 3 1	2 15½	175	14 11 8	3 7 3¾	0 9 7½
12 12	1 1 0	4 10½	0 8½	65	5 8 4	1 5 0	3 0	180	15 0 0	3 9 2¾	0 9 10½
13 0	1 1 8	5 0	0 8½	70	5 16 8	1 6 11	3 10	185	15 8 4	3 11 1¾	0 10 1¾
13 13	1 2 9	5 3	0 9	75	6 5 0	1 8 10	4 1½	190	15 16 8	3 13 0¾	0 10 5¼
14 0	1 3 4	5 4½	0 9¼	80	6 13 4	1 10 9¼	4 4¾	195	16 5 0	3 14 11¾	0 10 8¾
14 14	1 4 6	5 7¾	0 9¾	85	7 1 8	1 12 8¼	4 7¾	200	16 13 4	3 16 11	0 10 11½
15 0	1 5 0	5 9¼	0 9¾	90	7 10 0	1 14 7¼	4 11¼	300	25 0 0	5 15 4½	0 16 5¼
15 15	1 6 3	6 0¾	0 10¼	95	7 18 4	1 16 6¼	5 2¾	400	33 6 8	7 13 10¼	1 1 11¾
16 0	1 6 8	6 1¼	0 10¼	100	8 6 8	1 18 5¾	5 5¼	500	41 13 4	9 12 3¾	1 7 4¾
16 16	1 8 0	6 3¼	0 11	105	8 15 0	2 0 4¾	5 9	600	50 0 0	11 10 9¼	1 12 10¼
17 0	1 8 4	6 3½	0 11	110	9 3 4	2 2 3¾	6 0¾	700	58 6 8	13 9 2¾	1 18 4¼
17 17	1 9 9	6 5½	0 11¼	115	9 11 8	2 4 2¾	6 3¾	800	66 13 4	15 7 8¼	2 3 10
18 0	1 10 0	6 6	0 11¾	120	10 0 0	2 6 1¾	6 7¼	900	75 0 0	17 6 1¾	2 9 3¾
18 18	1 11 6	7 3¼	1 0¼	125	10 8 4	2 8 0¾	6 10¼	1000	83 6 8	19 4 7½	2 14 9½

LIVE-STOCK SOCIETIES.—HORSES.

Arab Horse Society.—Sec.: Brig. W. H. Anderson, C.B.E., Spring Hill, Capel St. Mary, Nr. Ipswich.

Association for the Improvement of the Breed of New Forest Ponies.—Hon. Sec.: Thomas Stovold, Harrow Farm, Bransgore, Christchurch, Hants.

Association of Racehorse Owners, Breeders and Trainers.—Hon. Sec.: T. A. Edge, 18, Buckingham Street, Strand, London, W.C.

British Percheron Horse Society.—Sec.: E. Ashby, 19, Bloomsbury Square, London, W.C.

British Trotting and Galloway Stud Book.—Sec.: William J. Clark, Alport, Bakewell.

Cleveland Bay Horse Society of Great Britain and Ireland.—Sec.: Major Tom Kirby, Gt. Ayton, Middlesborough, Yorks.

Clydesdale Horse Society of Great Britain and Ireland.—Sec.: S. Mackenzie, 93, Hope Street, Glasgow.

Dales Pony Improvement Society.—Sec.: W. Patterson, National Provincial Bank Chambers, Hexham-on-Tyne.

Dartmoor Pony Society.—Hon. Sec.: Miss Calmady-Hamlyn, Pearroc Vean, Buckfast, S. Devon.

Exmoor Pony Society.—J. Follett Pugsley, Hornhill, Tiverton, Devon.

Fell Pony Society.—Joseph Relph, Birkett Bank, Threlkeld, Cumberland.

General Stud Book.—Weatherby & Sons, 15, Cavendish Square, London, W.1.

Hackney Horse Society.—Sec.: R. F. Ling, 12, Hanover Square, London, W.1.

Highland Pony Society.—Hon. Sec.: Neil S. Mackenzie, 20, Esslemont Road, Edinburgh.

Hunter's Improvement and National Light Horse Breeding Society.—Sec.: F. H. Badge, 12, Hanover Square, London, W.1.

London Cart Horse Parade Society.—Sec.: R. F. Ling, 12, Hanover Sq. London, W.1.

National Horse Association of Great Britain.—Sec.: R. A. Brown, 12, Hanover Square, London, W.1.

National Pony Society.—Sec.: F. H. Badge, 12, Hanover Square, London, W.1.

Shetland Pony Stud Book Society.—Sec.: R. W. Walker, 3, Golden Square, Aberdeen.

Shire Horse Society.—Sec.: A. G. Holland, 12, Hanover Square, London, W.1.

Suffolk Horse Society.—Sec.: Raymond Keer, Woodbridge.

Thoroughbred Breeders' Association.—Sec.: E. E. Coussell, 26, Charing Cross Road, W.C.2.

Welsh Pony and Cob Society.—Sec.: Capt. T. A. Howson, Queen Building, Queen Street, Wrexham.

Yorkshire Coach Horse Society.—Sec.: Frederick Walker, 2, Lumley, Burton Stone Lane, York.

CATTLE.

Aberdeen-Angus Cattle Society.—Sec.: James R. Barclay, 91, Union Street, Aberdeen.

Ayrshire Cattle Herd Book Society of Great Britain and Ireland.—Sec.: Hugh Bone, 58, Alloway Street, Ayr.

Blue Albion Cattle Society.—C. J. Blore, 14, High Street, Uttoxeter.

British Friesian Cattle Society.—Sec.: George Hobson, Aldwych House, Aldwych, W.C.2

British Kerry Cattle Society.—Sec.: M. R. Leather, 12, Hanover Square, London, W.1.

Devon Cattle Breeders' Society.—Sec.: A. E. Gerrard, Wiveliscombe, Somerset.

Dun and Belted Galloway Cattle Breeders' Association.—John Kincaid, Balsdean, Rottingdean.

English Aberdeen-Angus Cattle Association.—Sec.: Miss Watson, Marston, Aldenham Avenue, Radlett, Herts.

English Dexter Cattle Society.—Sec.: E. Ashby, 19, Bloomsbury Square, London, W.C.1.

English Guernsey Cattle Society.—Sec.: Robert F. Ling, 12, Hanover Square, London, W.1.

English Jersey Cattle Society.—Sec.: E. Ashby, 19, Bloomsbury Square, London, W.C.1.

Galloway Cattle Society.—Sec.: J. Carlyle, Minsca, Waterbeck, Lockerbie, Dumfries.

Gloucestershire Cattle Society.—Sec.: L. G. E. Harrison, Mathon Court, Malvern.

Hereford Herd Book Society.—Sec.: W. G. C. Britten, 3, Offa Street, Hereford.

Highland Cattle Society of Scotland.—Sec.: Angus Cameron, National Bank, Oban.

Irish Shorthorn Breeders' Association.—Sec.: D. N. Jessop, Maryborough, Leix.

Jersey Herd Book.—Sec.: H. G. Shepard, 3, Mulcaster Street, St. Helier, Jersey.

Kerry and Dexter Society of Ireland.—Hon. Sec. and Treas.: Major E. Phelps, Muckross, Killarney.

Longhorn Cattle Society.—Sec.: E. H. Walters, Bingley Hall, Birmingham.

National Cattle Breeders' Association.—Sec.: L. Bull, Victoria House, London, W.C.1.

Recorded Dairy South Devon Cattle Society.—Hon. Sec.: R. Hall, Ferry, Bere Alston, S. Devon.

Red Poll Society of Great Britain and Ireland.—Sec.: C. H. Clarke, 29, Warrington Road, Ipswich.

Shetland Cattle Herd Book Society.—Hon. Sec.: W. Laidlaw M'Dougall, Sumburgh, Shetland, N.B.

Shorthorn Society of Great Britain and Ireland.—Sec.: Leonard Bull, Victoria House, Southampton Row, W.C.1.

South Devon Herd Book Society.—Sec.: S. A. Yeo, 3, West Street, Okehampton.

Sussex Herd Book Society.—Sec.: A. G. Holland, 12, Hanover Square, London, W.1.

The Park Cattle Society.—G. A. Myhill, Hall Farm, Bawdeswell, E. Dereham.

Welsh Black Cattle Society.—Sec.: G. O. Thomas, Bank Chambers, Bangor.

SHEEP.

Blackface Sheep Breeders' Association.—Sec.: A. J. Campbell, 48, Tay Street, Perth.

Black Welsh Mountain Sheep Breeders' Association.—Sec.: Mrs. Jervoise, Herriard, Basingstoke.

Border Leicester Sheep Breeders' Association.—Sec.: Miss Rose J. C. Grant, 11, St. Romans Terrace, Edinburgh.

Cheviot Sheep Society.—Sec.: G. Davidson, 1, Bridge Street, Hawick, N.B.

Clun Forest Sheepbreeders' Society.—Hon. Secs.: Messrs. Jackson and McCartney, Craven Arms, Salop.

Cotswold Sheep Society.—Sec.: James W. Tayler, Cold Aston, Bourton-on-the-Water, Glos.

SHEEP—(continued).

Dartmoor Sheep Breeders' and Flock Book Association.—Sec. : S. A. Yeo, 3, West Street, Okehampton.

Derbyshire Gritstone Sheep Breeders' Society.—W. Hardy, Stone Lea, Darley Dale, Matlock.

Devon Close-Wool Sheepbreeders' Society.—G. T. Owen, 94, High Street, Barnstaple.

Devon Longwoolled Sheep Breeders' Society.—Sec. : A. E. Gerrard, Wiveliscombe, Somerset.

Dorset Down Sheep Breeders' Association.—Sec.: E. B. Duke, 47, South St., Dorchester.

Dorset Horn Sheep Breeders' Association.—Sec. : J. Dean Smith, Bank Chambers, Dorchester.

English Blackface Sheep Society.—Sec. : W. Hepple, Denton Fell, Low Row, Carlisle.

Exmoor Horn Sheep Breeders' Society.—Secs. : D. J. Tapp, Highercombe, Dulverton, Somerset ; W. Dicker, Irles, Harepark Terrace, Alcombe, Minehead.

Hampshire Down Sheep Breeders' Association.—Sec. : W. J. Woolff, 49, Canal, Salisbury.

Herdwick Sheep Breeders' Association.—Sec. : R. H. Lamb, Browrigg, Caldbeck, Wigton.

Kent or Romney Marsh Sheep Breeders' Association.—Sec. : W. A. Ball, Victoria House, Southampton Row, W.C.1.

Kerry Hill (Wales) Sheep Breeders' Association and Flock Book Society.—Secs. : Morris, Marshall and Poole, Newtown, Montgomeryshire.

Leicester Sheep Breeders' Association.—Sec. : C. H. Simpson, Castle House, Hunmanby, E. Yorks.

Lincoln Longwool Sheep Breeders' Association.—Sec.: F. P. Taylor, 184, High St, Lincoln.

Lonk Sheep Breeders' Association and Flock Book Society.—Sec. : Captain G. R. Hesleden, Dean Farm, Todmorden, Lancs.

National Sheep Breeders' Association.—Sec. : H. B. Brown, Sentinel House, Southampton Row, W.C.1.

Northern Cheviot Sheep Breeders' Association.—Sec. : Andrew Innes, North Calder, Thurso, Caithness.

Oxford Down Sheep Breeders' Association.—Secs. : Maxwell and Stilgoe, 21, Marlborough Road, Banbury.

Roscommon Sheep Breeders' Association.—Sec. : N. P. Cotter, Carramore House, Roscommon.

Ryeland Sheep Breeders' Association and Flock Book Society.—Sec. : W. H. Woodcock, Imperial Chambers, Widemarsh Street, Hereford.

Shropshire Sheep Breeders' Association.—Secs.: Alfred Mansell & Co., Shrewsbury.

South Devon Flock Book Association.—Sec. : J. Todd, 30, Fore Street, Totnes.

Southdown Sheep Society.—W. O. Stride, 63, East Street, Chichester.

Suffolk Sheep Society.—Sec. : Guy P. Lempriere, 24, Princes Street, Ipswich.

Swaledale Sheep Breeders' Association.—Sec. : R. R. Sowerby, Winton House, Winton, Kirkby Stephen.

Welsh Mountain Sheep Flock Book Society.—Sec. : W. Williams, Bryncelyn, Sennybridge, Breconshire.

Wensleydale Long Wool Sheep Breeders' Association.—Sec. : J. B. Walker, Boarbank, Grange-over-Sands, Lancs.

Wiltshire or Western Horn Sheep Breeders' Association.—J. F. Reid, 162, Ardington Road, Northampton.

PIGS.

Cumberland Pig Breeders' Association.—Sec. : George M. Bell, 38, Lowther St., Carlisle.

Essex Pig Society.—Sec. : R. A. M. Reynolds, 13, Avenue Chambers, Market Rd., Chelmsford.

Gloucester Old Spots Pig Breeders' Society.—A. E. Perkins, 36, Baldwin St., Bristol.

Large Black Pig Society.—Sec. : B. J. Roche, 12, Hanover Square, London, W.1.

Large White Ulster Pig Society. Sec. : S. Clarke, Balmoral, Belfast.

Lincolnshire Curly Coated Pig Breeders' Association.—Sec. : R. Dixon, Ruskington, Sleaford, Lincolnshire.

National Long White Lop-eared Pig Society.—Sec. : B. J. Roche, 12, Hanover Square, London, W.1.

National Pig Breeders' Association (Large Whites, Middle Whites, Tamworths, Berkshires and Wessex Saddlebacks).—Sec. : Alec. Hobson, Victoria House, Southampton Row, London, W.C.1.

National Welsh Pig Society.—T. A. Howson, Queen Buildings, Queen Street, Wrexham.

Royal Dublin Society's Register of Pigs.—Sec., Ballsbridge, Dublin.

SUNDRY IMPORTS OF AGRICULTURAL PRODUCE.

Description.	Quantities.		Declared Values.	
	1937.*	1936.	1937.*	1936.
	cwt.	cwt.	£	£
Beef, Fresh, Chilled, Salted, and Frozen	12,337,285	11,671,395	22,692,444	19,212,525
Mutton and Lamb, Fresh, Chilled and Frozen†	6,818,534	6,321,056	18,968,241	17,312,280
Pork, Fresh, Chilled and Frozen† ...	1,111,891	1,141,198	3,401,809	3,070,356
Bacon	6,925,385	6,569,708	29,289,763	27,257,916
Hams	675,002	671,666	3,158,185	2,989,336
Dead Poultry and Game	536,042	452,671	2,138,994	1,786,067
Butter	9,416,366	9,740,735	47,359,297	44,385,148
Cheese	2,936,879	2,676,371	9,256,941	7,783,747
Milk Condensed	1,684,410	1,684,820	2,225,702	1,976,766
	Gt. Hunds.	Gt. Hunds.		
Eggs, in shell	24,731,642	24,606,921	10,440,053	9,885,935

* Figures for 1937 are provisional.
† Excludes offals.

PIGS START WELL AND FINISH QUICKER ON Thorley's PIG RATIONS THEY FEED, SATISFY & ARE EASILY DIGESTED

SPECIAL PIG REARING MEAL — For sows and piglets.

LUXUM PIG-A-BITS No. 1 — Weaning to six score.

LUXUM PIG-A-BITS No. 2 — For finishing.

GENERAL PURPOSE PIG-A-BITS — For all classes of pigs over 8-9 weeks of age on pasture or stores and empty gilts inside.

THE DANISH PIG HOUSE.

WHILST opinions differ considerably as to the best method of housing breeding pigs, it is now almost universally agreed that a fattening house should be built on what is generally known as the Danish or Scandinavian plan. It may sometimes be possible to alter or convert an existing building, but usually it is necessary to erect an entirely new building, and where any number of pigs are to be fattened such a building is well worth while.

A fattening house on Danish lines may be constructed of concrete, brick, timber, or a combination of these materials ; and many firms now manufacture them in sections, ready for erection on the farm. In planning a fattening house the essential points to be observed are that it should be dry, comfortable, well lighted, and well ventilated, but free from draught. It should be arranged to give maximum convenience in feeding, and for cleaning with the minimum of labour. Such a building will enable the pigman to look after his charges under the best possible conditions—which means increased efficiency on his part—and will also produce healthier and more thrifty pigs which will put on the maximum amount of weight for the minimum amount of food.

The usual lay-out of a fattening house consists of two rows of pens, with a dunging passage to each row, and a central feeding passage. A continuous trough running along the front of each row of pens has much to recommend it. After the size of the pen itself, the amount of trough space determines the number of pigs that can be accommodated in each pen, and 12 to 14 inches per pig is a good allowance. The pen itself should be just sufficiently large to hold comfortably the required number of pigs, usually ten ; if it is too large the pigs may not regularly use the dunging passage, and the pen then becomes dirty and needs more cleaning. In a large house it is a good plan to have a few pens of about half the normal size in which to accommodate the inevitable small lots that are left when finished animals are drafted for slaughter. The dunging passages should be about 3 feet 6 inches in width, to allow pigs of bacon weight to turn round in comfort.

A building with a double row of pens should, where possible, run north to south with the long walls facing east and west. Then if windows and roof lighting have been

installed one row of pens will get sunlight in the morning, and the other in the afternoon. The roof lighting is specially important, as pigs, in spite of the old-fashioned idea of keeping them in dark and dirty sheds, do far better when they get plenty of sunlight. Thorough and efficient ventilation is another essential for successful fattening, and various systems are to be found in use. But whatever happens there must be no draughts. The construction of the floor is another point of major importance, and it is essential that this should be dry and warm. Concrete is the material most commonly used, but it should be laid down on a good bed of clinker or rubble to ensure insulation from the underlying soil.

The cost of such a house depends on the details of construction and the material used, and may vary from as little as £1 per pig housed to £6. Obviously the lower the prime cost the better, but it is as well to remember that a fattening house should be expected to last for years, and first cost is not the only consideration to be taken into account.

PIG VALUES.

THE Bacon Development Board states that in every £9 earned by the farmers of this country, £2 comes from dairy produce and £1 from pigs. Estimates of the value of agricultural produce in England and Wales show that pigs, at nearly £25,500,000 account for more than one-ninth of the total. They are bettered only by milk and dairy produce and cattle, and are worth £10,000,000 more than sheep and lambs or eggs. None of the farm crops, even potatoes at £14,500,000 and wheat at £6,700,000 come anywhere near this figure.

BRUSHES COST MORE.

UNTIL the early part of the present century Russia with Siberia and Poland provided the bulk of the world supply of bristles, China and India the remainder; since then the supplies from Russia and Siberia have steadily declined until now China provides the larger parts.

Pigs in Great Britain do not produce any bristles worth mentioning. An animal has been evolved in this country for meat quality and early maturity and the coat is fine, short and scanty. The same development has been going on in other countries, with the result that during the past twenty-five years bristles measuring 4 to 6 inches in length have increased 4 to 10 times in value.

BRITISH WEIGHTS AND MEASURES.

DRY OR CORN MEASURE.

Quart	= 2 Pints	Strike	= 2 Bushels
Pottle	= 2 Quarts	Coomb	= 4 Bushels
Gallon	= 4 Quarts	Quarter	= 8 Bushels
Peck	= 2 Gallons	Load	= 5 Quarters
Bushel	= 4 Pecks	Last	=10 Quarters

Boll of Meal = 140 lb. 2 Bolls = 1 Sack

Previous to the Corn Sales Act of 1921 the recognised weight of a bushel of corn varied in different parts of the country. But under that Act all British corn must be bought and sold by the cwt. The standard weights are as follows :—

Wheat	63 lb. per bush.,	504 lb. per qr.	=4½	cwt.
Oats	42	,,	336	,,	=3	,,
Barley	56	,,	448	,,	=4	,,
Beans	66½	,,	532	,,	=4¾	,,

Coals were formerly sold by measure ; 3 heaped bushels= 1 sack, 12 sacks= 1 chaldron. Coke, apples, potatoes and some other goods are still sold by heaped measures and the sack of 3 bushels ; of coke, 4 bushels are usual.

Fruit.—The Covent Garden bushel basket is 17½ inches in diameter at top, 10 inches at the bottom, and is 10 inches deep. The smaller market baskets are said to vary in size according to the season and supply.

AVOIRDUPOIS WEIGHT.

Drachm	dr. =27⅓ grains (27.34375)
Ounce	oz. =16 drachms 437.5 grains
Pound	lb. =16 oz., 526 dr., 7,000 grains
Customary Stone	st. Butcher's meat=8 lb.
Legal Stone	st.=Horseman's weight=14 lb.
Quarter	qr.=28 lb.
Cental or Quintal	cent.=100 lb.
Hundredweight	cwt.=4 qr., 112 lb.
Ton	T.=20 cwt., 2,240 lb.

Avoirdupois weight is used in almost all commercial transactions and common dealings, but in addition to the above there are special weights for various articles, the chief of which are :—

A Quartern Loaf	= 4 lb.
A Firkin of Butter	= 56 ,,
A Firkin of Soft Soap	= 64 ,,
A Box of Fish, about	= 90 ,,
A Barrel of Gunpowder... ...	=100 ,,
A Barrel of Raisins	=112 ,,
A Seam of Glass, 24 stones of 5 lb.	=120 ,,
A Barrel of Butter, 4 firkins ...	=224 ,,
A Barrel (or Pack) of Soft Soap...	=256 ,,
A Faggot of Steel...	=120 ,,
A Pig of Ballast	= 56 ,,
A Fodder of Lead, London and Hull	= 19½ cwt.
A ditto. Derby=22½ cwt. ; Newcastle	= 21½ ,,
A Cask of Blacklead	= 11½ ,,
A Sack=Potatoes, 168 lb. ; Flour, 280 lb. ; Coals, 224 lb. A ton of Coal, 10 sacks.	
Bricks, load of	= 500
Coals, sack 2 cwt. ; small ditto 1 cwt.	
Coke, sack=4 bushels.	
chaldron=12 sacks.	
Flour barrel, 196 lb. ; sack, 280 lb. ; peck, 14 lb. ; bushel, 56 lb.	
Hops, pocket of	...=1½ to 2 cwt.
Paper, quire	...=24 sheets
,, ream	...=20 quires
Parchment, roll of ...	...=60 skins
Tea, chest of, Congou ...	...=80 to 100 lb.
,, ,, Hyson ...	...=60 to 80 lb.

APOTHECARIES' WEIGHT.

Scruple	1=20 Grains	...	...= 20 grs.
Drachm	1= 3 Scruples	...	...= 60 ,,
Ounce	1= 8 Drachms	...	...= 480 ,,
Pound	lb.=12 Ounces	...	...=5,760 ,,

The avoirdupois oz. of 437½ grains and the lb. of 7,000 grains are the weights named in the British Pharmacopœia; drugs are purchased by avoirdupois, but compounded by apothecaries' weight. The apothecaries' oz. and lb. may now be considered obsolete.

APOTHECARIES' MEASURE.

60 Minims	...=1 Fluid Drachm
8 Fluid Drachms ...	...=1 Ounce
20 Fluid Ounces ...	...=1 Pint
8 Pints	...=1 Gallon

TROY WEIGHT.

Carat	...=3.17 grains
Pennyweight... ...	dwt.=24 grains
Ounce	oz.=20 dwt., 480 grs.
Pound	lb.=12 oz., 240 dwt., 5,760 grs.
Hundredweight ...	cwt.=100 lb.

HAY AND STRAW.

Truss of Straw, 36 lb. Truss of Old Hay, 56 lb.
Truss of New Hay (to September 1), 60 lb.
Load, 36 Trusses—Straw, 11 cwt. 2 qrs. 8 lb. ; Old Hay, 18 cwt. ; New Hay, 19 cwt. 1 qr. 4 lb.

WOOL.

Stone	st.=2 Cloves, 14 lb.
Tod	td.=2 Stone, 1 qr.
Pack	pk.=240 lb.

Since the advent of Shoddy some of the above weights have become nearly obsolete, although the terms are still in use with different values : thus 16 lb.=1 st. ; 28 lb.=1 Tod ; 20 lb.=1 Score ; 12 Score or 240 lb.=Pack.

LIQUID MEASURE.

The Gill contains 8.665 cubic inches.
The Pint contains 4 gills or 34.660 inches.
Quart=2 pints=8 gills.
Gallon=4 quarts=32 gills.
Pin=4½ gallons or ⅛ barrel.

	Gals.	Qts.	Pts.
Firkin, or Quarter Barrel ...	9	36	72
Anker (10 gallons)	10	40	80
Kilderkin, Rundlet or ½ Barrel	18	72	144
Barrel	36	144	288
Tierce (42 gallons)	42	168	336
Hogshead of Ale (1½ barrel)...	54	216	432
Puncheon	72	288	576
Butt of Ale (3 barrels) ...	108	432	864

CUBIC OR SOLID MEASURE.

Cubic Foot ...	...=1,728 cu. in.
Cubic Yard ...	...=27 cu. ft.
Stack of Wood ...	...=108 cu. ft.
Shipping Ton ...	...=40 cu. ft. merchandise
Shipping Ton ...	...=42 cu. ft. of timber
Ton of displacement of a ship ...	...=35 cu. ft.

Thorley's WORM POWDERS

More than 50 % of our Pigs are infested with worms!

No worm-infested pig ever brought its owner a useful profit!

DE-WORMING six weeks before farrowing should be a routine precaution and young pigs should be treated individually as soon as weaned. The cost is little and the saving is great. Directions with each powder.

FIT and FREE from common ailments

Prevention is Cheaper than Cure!

THE regular use of **Thorley's Medicinal Pig Powders** will keep pigs, both large and small, in tip-top progressive condition.

The powders are invaluable in the treatment of common pig ailments and are a first-class tonic. Directions with each Powder.

ANÆMIA IN YOUNG PIGS.

A COMMON trouble among young pigs reared indoors is the occurrence of a form of anæmia which leads to poor growth and emaciation. At the National Institute for Research in Dairying Mr. A. S. Foot and Mr. S. Y. Thomson have investigated the causes and the remedy. Writing in the Journal of the Ministry of Agriculture, they state that if anæmia, or associated ailments, causes the young pig to become stunted and emaciated no amount of dosing with iron salts will bring a rapid improvement. One reason why outdoor rearing of litters is becoming popular seems to be that anæmia is prevented at an early stage and by natural means. If the pig is to be completely protected it must be given access to the iron of the soil or to iron in some other form during the second week of life. When little pigs begin to take solid food the condition, as a rule, is gradually relieved, but these experiments show that if pigs are kept on a concrete floor during the time that their diet consists solely of milk a condition of anæmia almost invariably appears.

The inability of the sow to pass on to the little pigs iron added to her diet now seems to be well established. The pig farmer has therefore to give attention to the direct supply of iron to the youngsters. One practical remedy is outdoor rearing or running the litters out during the critical second and third week. Failing this, he may place soil in the sty, rub iron preparations along the sows' teats, or dose with iron solutions. If the last method is adopted iron pyrophosphate appears to have certain advantages over some of the other iron salts or preparations.

FARM STOCK PESTS.

FEW troubles are of greater hindrance to the healthy development of farm stock than lice : they are persistent blood suckers, and if allowed to continue soon produce a very weakening effect on the infested animal. Fortunately the remedy is fairly simple, and if a little olive oil and paraffin, in the proportion of two parts of the former to one of the latter, are well mixed and rubbed over the skin it will be found very effective. A day or two after the first application the skin should be given a good washing, and if necessary another application should be given in the course of a week or so, as there is always the possibility of the eggs adhering to the hair hatching out.

MULTUM IN PARVO.

The Suez Canal was first projected in the early half-legendary days of Egyptian history. A primitive canal from the Nile to the Red Sea was in existence in the year 1380 B.C. The channel of this is still traceable. Another canal was completed by Darius of Persia. By Cleopatra's time, however, this was no longer navigable, and was not repaired until the conquest of Egypt in the seventh century. Haroun al-Raschid abandoned the idea of a canal for fear of exposing his coasts to the Byzantine navy. Later, Turkey successfully opposed a similar project. Finally came Ferdinand de Lesseps and the present Suez Canal, opened in 1869.

The three balls, used as a sign outside a pawnbroker's shop, were the arms of the Medici family, the earliest and biggest moneylenders of Lombardy. The family was eminent in medicine and the sign represents three gilded pills.

Probably if you asked the average person for his definition of a cockney he would say 'anyone born witnin sound of Bow Bells.' This arises from the fact that for many years Bow Bells were rung at nine o'clock every night to warn all apprentices and young men of Cheape that it was time they were in bed. Actually, the word is a term of derision used by dwellers on the soil for those unfortunate people compelled to herd together in towns. In Anglo-Saxon times the life of a countryman loomed much larger in the social scale, and the town-dweller was comparatively unimportant. Sometimes, the farmer would find in the nest a small egg not much larger than a pigeon's, usually a sign that the hen was going off the lay. The egg was yolkless and useless and was known as a 'cockena' or cock's egg. So when a countryman wished to belittle a townsman he would refer to him as a 'cockena,' and from this we get the word cockney, which actually means a town-dweller.

Some interesting figures were published recently regarding the quantity of sweetmeats consumed in this country. Total annual expenditure on this item amounted to £55,000,000, or, in other words, 35s. worth of sweets are sold in this country every second all through the year!

One of the romances of modern times is the development of the Cocoa and Chocolate industry. It may be news to many of our readers to learn that, only 40 years ago, the cacao bean was hardly in existence on the Gold Coast, whilst to-day something approaching 250,000 tons, or one-half of the world's output, are produced annually by Britain's second oldest colony.

Boxer, the female giraffe born at Whipsnade, was 6 ft. 6 in. tall on Saturday, having grown 1 ft. 4 in. since mid-day on the previous Monday.

The legend that a horseshoe brings good luck is supposed to have originated with St. Dunstan, who was noted for his skill in shoeing horses. One day Satan himself is said to have appeared and demanded that his "single hoof" should be shod. St. Dunstan, recognising his customer, tied him tightly to the wall and proceeded to do as he was bid, but purposely inflicted so much pain that his Satanic Majesty begged for mercy. Thereupon St. Dunstan released his captive after having extracted from him a promise that he would never enter a place where a horseshoe was displayed.

Prince of practical jokers was William Horace de Vere Cole (died 1936). In 1905 he posed at Cambridge as Sultan of Zanzibar, then staying in London, and received civic welcome. On another occasion he paid official visit to Dreadnought as Vizier to Prince of Abyssinia—who was actually lady friend. Disguised as navvies, he and some friends once tore up roadway in Piccadilly.

In an average watch, no matter its size, there are nearly two hundred parts. Some of these are so small that 10,000 of them would not fill a thimble!

For its size a watch movement is the most robust machine made. There is as much pressure per square inch on the Pivots of a Balance Staff as there is on the piston of a locomotive. Yet, by reason of its size, the watch is also the most delicate of machines. The Centre Wheel carrying the Hands revolves 24 times a day. The Balance Wheel makes nearly half a million swings in 24 hours, and in a pocket-size watch the rim of the Balance Wheel travels 23 miles every day.

The Viaduct which crosses the Estuary of the River Forth, was opened on 4th March, 1890, by the late King Edward VII., at that time Prince of Wales. It took seven years to build and the maximum number of workmen employed at the one time was almost 5,000. The cost of construction was approximately £2,500,000 Sterling. The total length of the Bridge with its viaducts is 1 mile 1,005 yards. The height of the rails above sea level at high tide is about 157 feet 8 inches; the extreme height to the top of the Viaduct above sea level is 361 feet. The total height from the bottom of the lowest foundation to the top of the Bridge is 451 feet. The materials employed in the construction of the Forth Bridge were as follows:—Steel 54,160 tons; Masonry—Granite 740,000 cubic feet, Ordinary Stone 46,300 cubic yards, Concrete 64,300 cubic yards, Cement—more than 21,000 tons; Rivets—6,500,000 equals 4,200 tons. The total surface of steel extends to 135 acres and has to be painted every three years. The number of painters employed is 55 in Summer and 45 in Winter, and it requires 18 tons of paint per annum.

Scientists are agreed that the tree which has been of greatest use to man over the longest period of time is the palm tree, and of the many varieties, the date palm is the most valuable. Cultivated for more than 3,500 years, it supplies food, oil, wood and fibre. The second most valuable tree is the coconut palm, which for over 3,000 years has supplied man with food, copra (from which certain forms of animal feeding stuffs are manufactured), fibre, and valuable oils.

The phrase "A flash in the pan" is in reference to a gun which fails to explode when fired. In old-fashioned firearms the powder often flashed in the lock-pan of the gun without igniting the charge.

There is a tradition that ink was used in China 1,000 years before Christ. This is probably correct, for ink was certainly used in Palestine by Israelite and Jewish scribes at a very early date. The Lachish Letters written in the Phœnician Hebrew script, date back to 600 B.C. They were written in ink on pieces of pottery with a reed pen, and on analysis this ink proved to be of the same composition as what was used for writing the Codex Sinaiticus. The best inks to-day are made from the tannin found in gall-nuts and from a derivative of iron, called ferrous sulphate. A little gum is added. The solution is pale in colour, but on exposure to air it darkens and becomes black. To give the ink an initial tint, a blue dye is added. Hence "blue-black" ink.

Before railways were invented it was considered best to use inland "navigations," or canals, rather than horse-carts to transport goods. Inland "navigations" were therefore made all over the country. The men employed in the digging were called "navigators." Shortened to "navvy," the name passed to any men who did road-mending and like work.

Tithes existed in Babylonia, Egypt, Greece and Rome. They originated in a tribute demanded of his subjects by a ruler or conqueror. The custom of dedicating one-tenth of the spoils of war, and the first fruits of the land, to the gods led to the extension of tithes until they became religious dues, and were incorporated in the law of the land.

STOCK THRIVES BEST ON SPRING GRASS FEEDING

AND A DAILY RATION OF

Thorley's

GRASS CAKE-A-BITS!

They form an appetising and nourishing feed, controlling the effects of young Spring grass.

JOSEPH THORLEY, LTD., KING'S CROSS, LONDON, N.1

Established 1848.

THE best of Spring and Summer feeds !

In addition to their high nutritive value they enable stock to extract the maximum nutrition from protein-rich Spring and Summer grass.

THE NUTRITIVE VALUE OF PASTURE.

EVERY farmer knows that spring grass has a most marvellous effect on both the health of his stock and the yield of milk. On the other hand he also knows that care must be taken when cattle are first turned out on to such grass. Particularly does this apply when young beasts are put on to old rich pastures during the spring flush of grass, when they are liable to suffer from "blowing" and excessive scouring.

But according to recent work on the subject by Dr. H. E. Woodman and others, it would seem that a contributory cause of the ill-effects sometimes found when cattle are first turned out may be due to the tendency to over-eat such young herbage. The enlightened farmer therefore always feeds concentrates to counteract this tendency, and to balance the ration. In the old days the practice was usually to feed a straight cake such as undecorticated cotton cake, which certainly had the effect of preventing scouring.

But we now realise that whilst the prevention of scouring is an important function of the concentrates fed whilst cattle are on young grass, an equally important function is to enable the stock to make the fullest possible use of the valuable proteins contained in that young grass. Writing in the Journal of Agricultural Science, Dr. H. E. Woodman and others state: "It has been shown that a 12 cwt. cow giving four gallons per day will consume more than twice the amount of digestible protein necessary for its requirements" when on early spring grass. This is obviously a cause of much waste, and the wise feeder will give his stock a concentrate such as Thorley's Grass Cake-a-Bits, which will enable them to obtain the maximum value from the pasture.

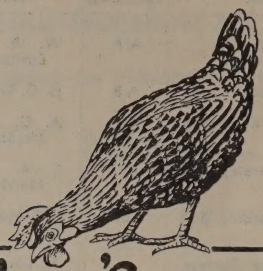
The total yield of dry matter per acre usually rises gradually from when growth first starts till about the last week in May or beginning of June, and thereafter falls fairly rapidly. The protein content of the grass also rises from early spring onwards, but reaches its peak at the beginning of May, after which it falls gradually till about the end of July and rises again during the autumn. Naturally, both total amount of growth and the protein content will vary according to the rainfall and class of soil.

LIST OF MILK RECORDING SOCIETIES.

All Societies have adopted the Ministry's Calf-marking Scheme.

Counties and Societies.	Identifying Earmarks.	Name and Address of Secretary.
ENGLAND.		
Bedfordshire—		
Bedfordshire Milk Recording Society	B.O.	B. C. Prole, Elstow, Bedford
Berkshire—		
Berkshire Milk Recording Society	A.H.	E. D. C. Neal, 8, Cross Street, Reading
Buckinghamshire—		
Buckinghamshire Milk Recording Society	B.G.	F. V. Lillywhite, Butlers Cross, Aylesbury, Bucks.
Cambridgeshire—		
Cambridgeshire and District Milk Recording Society	V.	J. S. Penicud, 10, Corn Exchange Street, Cambridge
Cheshire—		
Cheshire County Milk Recording Society	G.	R. H. Lewis, Westminster Bank Chambers, Nantwich Road, Crewe
Cornwall—		
Cornwall Milk Recording Society	B.F.	W. T. Laity, The Moorings, Perran Downs, Marazion, Cornwall
Cumberland—		
Cumberland and North Westmorland Milk Recording Society	P.	G. M. Bell, 38, Lowther Street, Carlisle
Derbyshire—		
Derby and District Milk Recording Society	U.	S. T. Parker, Agricultural Office, Cattle Market, Derby
Peak Milk Recording Society	C.	J. Hill, Farmer's Club Office, Bakewell, Derbyshire
Devonshire—		
East Devon Milk Recording Society	A.W.	J. P. Bishop, The Downs, Woodwater, Exeter
South Devon and District Milk Recording Society	A.L.	W. L. Powlesland, Broadpark, Rattery, South Brent, Devon
Dorset—		
Dorset Milk Recording Society	L.	S. E. Gillingham, Wadham House, Dorchester, Dorset
Durham—		
Durham County Milk Recording Society	B.D.	R. T. Handley, 35, Priestgate, Darlington
Essex—		
Essex County Milk Recording Society	O.	R. A. M. Reynolds, 13, Avenue Chambers, Market Read, Chelmsford
Gloucestershire—		
Campden, Moreton and District Milk Recording Society	A.S.	D. H. Pearman, Hands Hill, Longborough, Moreton-in-Marsh, Glos.
Gloucestershire Milk Recording Society	A.D.	F. E. Bowl, The Cotswold, Cleeve Hill, Cheltenham, Glos.
Hampshire—		
Hampshire Milk Recording Society	Z.	F. F. Wooldridge, Station Road, Petersfield, Hants. (Organising Secretary: Ernest Rogers, Spencer House, Petersfield)
Herefordshire—		
Herefordshire Milk Recording Society	A.O.	H. A. Morris, The Home End, Ledbury
Hertfordshire—		
Hertfordshire County Milk Recording Society	A.Y.	D. J. Rumbold, Midland Bank Chambers, 40, Fore Street, Hertford
Kent—		
Kent Milk Recording Society	W.	R. G. Noakes, 177, Loose Road, Maidstone
Lancashire—		
Lancashire County Milk Recording Society	X.	L. E. Knagg, 58, Breck Road, Poulson-le-Fylde, Blackpool
Leicestershire and Rutland—		
Leicestershire and Rutland Milk Recording Society	B.	F. V. Millington, Pirton, Kirby Muxloe, Leicester

Counties and Societies.	Identifying Earmarks.	Name and Address of Secretary.
Lincolnshire—		
Lincolnshire Milk Recording Society	A.X.	W. R. Woodfield, Moulton Chapel, Spalding, Lincs.
Norfolk—		
Norfolk Milk Recording Society	A.B.	H. G. Bugg, Loddon, Norwich
Northamptonshire—		
Northamptonshire Milk Recording Society	A.C.	A. G. Pettit, Institute of Agriculture, Moulton, Northampton
Northumberland—		
Northumberland Milk Recording Society	A.G.	J. A. Harris, Butterwell, Morpeth, Northumberland
Nottinghamshire—		
Nottinghamshire Milk Recording Society	S.	J. G. Stephenson, Hayton, Retford, Notts.
Oxfordshire—		
Oxfordshire Milk Recording Society	M.	A. Loose, 16, Beaumont Street, Oxford
Shropshire—		
Shropshire Milk Recording Society	A.M.	Major T. H. Montgomery, D.S.O., 9-11, Talbot Chambers, Shrewsbury
Somerset—		
Bristol and North Somerset Milk Recording Society	D.	R. Vowles, 43, Broad Street, Bristol, 1
Somerset and North Dorset Milk Recording Association	A.	A. G. C. Witherden, Church House, Church Street, Yeovil, Som.
Staffordshire—		
Staffordshire Milk Recording Society	B.E.	C. P. Westwood, The Farm Institute, Penkridge, Stafford
Suffolk—		
Suffolk Milk Recording Society	K.	B. A. Steward, 10, Tavern Street, Ipswich
Surrey—		
Surrey Milk Recording Society	A.F.	A. E. Hickling, 32, London Road, Guildford
Sussex—		
East Sussex Milk Recording Society	A.R.	Albert Smith, 177, High Street, Lewes, Sussex
West Sussex Milk Recording Society	A.V.	G. F. Cotching, 13, Liverpool Gardens, Worthing
Warwickshire—		
Warwickshire Milk Recording Society	A.U.	Captain H. Harvey, 4, Central Chambers, The Parade, Leamington
Westmorland—		
Kendal and South Westmorland Milk Record Society	E.	F. A. Capstick, Bridge House, Old Hutton Kendal
Wiltshire—		
North Wilts Milk Recording Society	A.K.	G. E. Knight, Cherhill, Calne
South Wilts Milk Recording Society	A.N.	W. E. Wright, 6, Council Houses, Semley, Shaftesbury, Dorset
Worcestershire—		
Worcestershire Milk Recording Society	H.	A. J. Winstanley, 213, Birchfield Road, Redditch, Worcs.
Yorkshire—		
Yorkshire Milk Recording Society	N.	W. Wales, Tadcaster
WALES.		
Anglesey—		
Anglesey and Caernarvonshire Milk Recording Society	A.Z.	J. G. Jones, Tynycoed, Abererch, Pwllheli
Cardiganshire—		
Cardiganshire Milk Recording Society	B.N.	L. Terwyn Davies, Agricultural Offices, Lampeter, Cards.
Carmarthenshire—		
Carmarthenshire Milk Recording Society	B.T.	D. Wynne Davies, Glamtowy, Nantgaredig, Carmarthenshire
Denbighshire—		
Denbighshire and Flintshire Milk Recording Society	B.K.	T. Arnot Owen, Hendy, Nannerch, Mold, Flints.
Glamorganshire—		
Glamorgan Milk Recording Society	B.R.	J. D. Davidson, County Hall, Cardiff
Monmouthshire—		
Monmouthshire and Breconshire Milk Recording Society	B.M.	G. H. Purvis, Monmouthshire Agricultural Institution, Usk, Mon.
Pembrokeshire—		
Pembrokeshire Milk Recording Society	B.U.	Glyndwr Phillips, 170, West Side, Prendergast, Haverfordwest, Pembs. (Assistant Secretary: W. E. D. Jones, County Offices, Haverfordwest, Pembs.)



Thorley's

POULTRY RATIONS

CHICK MASH
GROWING MASH
LAYING MASH
HEN BATTERY MASH
FATTENING MASH
BREEDING MASH
TURKEY FATTENING MASH

C.L.O. is included in the Chick Mash and Hen Battery Mash to the extent of 2 % and in the Breeding Mash at the rate of 1 %. It can be included in other Rations as desired at an additional cost which we shall be pleased to quote.

All the above are obtainable in Pellet form

YOU CAN DEPEND ON THORLEY'S

GRASSLAND IMPROVERS.

APART from the direct profits which can be made from egg production, poultry can be of sufficient indirect value to warrant the attention of the general farmer. The great improvement which can be brought about in the value of grassland when poultry are allowed to range over it is well known. Management here again is important, because the birds will not improve the pasture if kept on the same patch year after year. In this connection the method of housing the birds has to have some consideration. Although in recent years there has been an increased tendency to move the birds away from the steading and put them on the fields, too often the fixed colony house has been used for housing them. With fixed housing the pasture becomes badly worn round the house and the field is not evenly grazed, also droppings-borne diseases are more easily spread since there is a concentration of the droppings round the house. The fixed house should be discarded in favour of one which is easily movable and one which is not easily damaged by cattle. Whether slatted or solid floor houses are selected will depend on the district, but in either case they should be moved regularly either once a fortnight or once a month at most. Fold units, where they can be used, are easily moved and the birds' droppings more evenly spread, but they are, of course, not suitable for all farms because of the nature of the ground.

The improvement in the pasture is brought about by the scratching of the birds, which allows the air to get to the roots and the soil, and also the droppings are of high manurial value, rich in nitrogen. The composition of poultry manure varies to some extent according to the food fed and the purpose for which the birds are kept, but the following is an average analysis :—Moisture, 52.93 per cent., organic matter 29.3 per cent., nitrogen 2.12 per cent., potash (K_2O) 0.60 per cent., phosphoric acid (P_2O_5) 1.21 per cent., calcium (C_aO) 1.16 per cent. It has been estimated that in one year 100 hens to the acre produce the equivalent of an ordinary dressing of farmyard manure.

ALTERATION TO PLANT.

IT takes very little to upset pullets once they have started to lay. If, therefore, any alterations are to be made to their house or run, these should be attended to before the birds begin production.

LUCERNE.

AT the present time, when every arable farmer is looking for any possible means by which labour costs can be reduced or production increased, it is difficult to understand why the lucerne crop is not more widely grown. It is a crop which can remain down for from five to seven years ; it normally produces three or even four cuts a year. The produce is rich in protein and lime, and for this reason hay made from lucerne is one of the most valuable roughages used on the farm. It is above all a stand-by in times of drought, and its value for supplementing pasture during the dry part of the summer cannot be over emphasised. It can be fed green, made into hay, ensiled, or dried artificially and ground into a meal for incorporation in poultry mixtures. Finally, when ploughed up, the land is left considerably richer in nitrogen than it was before the crop was sown.

Lucerne can be grown on a wide variety of soils provided they are not ill-drained, very shallow, or actually acid. It can stand hard weather and high rainfall. It is, however, more sensitive to weed competition than any other forage crop, particularly in its first year of growth. To sow it on weed-infested land is courting certain failure.

The National Institute of Agricultural Botany makes the following recommendations to prospective growers :—

Sow on clean land ; do not use a cover-crop ; do not broadcast—drill at 10 or 12 inches ; sow at 20 lbs. per acre ; sow shallow at ½ in. on a firm seed-bed.

In the East, drill in April ; in the West, if difficult to clean land, drill in July or August after summer cleaning.

Inoculate your seed for land where lucerne has not been grown before. (Messrs. Allen & Hanbury, Bethnal Green, London, E.2, supply cultures as perfected by Rothamsted Experimental Station at the rate of 3s. per acre sown).

Use every means to keep the land clean during the first year.

In the first season an early cut taken with knives set high when the plant is about 10 in. high prevents annual weeds from seeding.

Subsequent cuttings should be taken at the early flowering or flower-bud stage.

Heavy harrowing after the later cuts, and always in late autumn and early spring is recommended ; such harrowings help to keep weeds in check.

Use phosphatic manures on clay soils.

Use both phosphatic and potash manures on lighter soils.

If hay is made, handle gently, or the most valuable portion—the leaves—will be lost.

Stack very dry to avoid heating.

Select the right strain. The County Agricultural Organiser will tell you which it is.

POINTS OF LAW ON BOUNDARIES.

MUCH litigation could be avoided if the respective parties were only aware of a few elementary points of law relating to their particular trade or profession.

The question of boundaries, for instance, is often a source of confusion and lively argument among farmers, both as regards ownership and liability. If two fields are divided by a hedge and ditch, the hedge belongs to the owner of the field in which the ditch is not. If, however, there is a ditch on either side, the ownership of the hedge must be proved by showing acts of ownership.

Walls between properties usually belong to the owners in common, but fences belong to the owner of the land on whose side the posts and cross-rails are fixed. There is a liability to keep hedges, fences, or walls fronting the highway in good condition, and to keep the hedges properly trimmed.

Barbed wire fences are erected at an owner's risk, and he is liable for any damage or injury to persons or animals using the highway. No man is bound to fence his land at all (unless he is under a prescriptive liability to fence), so that if neighbour's cattle enter on his land, he has an action for trespass. The law rules that a man must keep his cattle on his own land, and it is no defence to state that they escaped owing to the disrepair of his neighbour's fences or hedges.

There is also a liability to keep fenced any pit or quarry that is within fifty yards of a highway. In the same way, any kind of hole that is close to the public way must be properly protected by fencing, and an owner who omits this precaution is liable for accidents happening to passers-by through his default.

If a farmer's field adjoins a railway, and his cattle stray on to the rails and suffer injury, the farmer can claim compensation from the railway company. But, in a case where the cattle from the field next to the one adjoining the railway, strayed through that field and thus on to the rails and were run over, the company were held not to be liable, although the latter's fences were defective, on the grounds that access was first obtained through the defective fencing of the adjoining field.

HOUSEHOLD HINTS.

TO KEEP CUT FLOWERS FRESH.

Most women give their cut flowers fresh water every day, that is to say, add fresh water to that already in the vases, for it is a mistake to replace the whole water contents every day; and they also clip the flower stems before they are replaced. What most people forget, however, is that flowers need food and a tonic in order that their lives may be prolonged. A teaspoonful of bicarbonate of soda mixed with every pint of water encourages the cells of the stalks to absorb moisture. A pinch of salt is another helpful medicine to add to the water, which, especially in winter time, should always be lukewarm, while a solution of camphor will have equally beneficial effects.

Hot water is sometimes invaluable for reviving flowers that have become jaded through a journey or have been sent through the post. The drooping blooms should be placed in a wide bowl full of hot water and stood in a darkened room or cupboard. By the time the water is cold, the flowers will have become quite firm and fresh again, and can then be placed in the usual vases, with bicarbonate of soda, salt or camphor.

SHIN OF BEEF STEW.

Shin of beef, which costs from sixpence to eightpence a pound, makes excellent stews. Cut out all the sinewy parts, cut in neat pieces, and brown them in a little dripping.

Fry a large onion, cut in slices, together with a few carrots and other vegetables you like and have on hand. Put all into a casserole or stewpan, with a little hot water or stock. Be sure not to use too much water, as there is a great deal of gravy in the beef. Cook in a very slow oven for two to two and a half hours. Half an hour before you want to dish the stew remove and put in about half a dozen tiny dumplings, the size of marbles.

MENDING HOUSEHOLD LINEN.

The care household linen receives makes years of difference in its wear. Thin spots can be daintily darned before they become holes, and the best thread to use in darning damask is the finest of embroidery cotton, and if an embroidery hoop or frame is used to keep the cloth in place the work can be more neatly done than if held in the hand.

HAM SOUFFLÉ (Serves six).

Ingredients — 3 tablespoonfuls butter, 3 tablespoonfuls flour, 2 cupfuls milk, ½ teaspoonful salt, ⅓ cupful breadcrumbs, 2 cupfuls ground cooked ham, 3 eggs, 2 tablespoonfuls grated cheese, ¼ cupful buttered breadcrumbs. Make a sauce by melting the butter in top part of double boiler, stirring in the flour, and adding the milk slowly. Cook for several minutes. Add the ⅓ cupful crumbs, and the salt. Cool the sauce slightly and then add the ham and the slightly beaten egg yolks to the sauce. Carefully fold in the stiffly beaten whites of eggs, turn into a well-greased baking pan or casserole, spread the top with buttered crumbs, sprinkle with grated cheese. Bake for about an hour in a slow oven (300 deg. F.). Serve at once.

KITCHEN TIPS.

If you run short of butter and want it in a hurry, add a little warm milk to what you have, cream it well and it will go twice as far.

Instead of cooking onions whole when they are required for sauces, grate them finely after peeling them. Cover them with water and simmer slowly for about twenty minutes. By that time they will be perfectly soft and ready for use.

When a cake is done too much on the outside, wrap it while it is still warm in a clean cloth and leave it for half an hour. The steam softens the hard crust and makes it palatable.

USES FOR POTATOES.

Discussing a pamphlet recently issued by the Potato Marketing Board, an Irish journal suggests that the author might have pointed out that potatoes "have many uses in the home besides that of being served for dinner. For instance, they act as a substitute for soap, cleanse the hands well and make them soft and smooth; the water in which they have been boiled is excellent for sponging the dirt out of silk, and if tablecloths that have been marked with tea or coffee are soaked in this water before being washed, the stains will come out at once. Then a cut potato is the best possible cleanser for oil paintings if just rubbed over them until it becomes soiled, when the dirty part should be sliced off and the treatment continued, and after the painting has been sponged with cold water and dried, it will look like new."

FRIED MARROW WITH POACHED EGGS.

A savoury way of serving marrow is with poached eggs. Cut a young marrow into rings about half an inch thick, pare off the rind and stamp out the seeds with a round cutter. Then flour each ring lightly, brush over with beaten egg, dip in breadcrumbs, and fry in hot fat till a golden brown. Keep hot while you poach sufficient eggs to allow one for each ring. Put the eggs in the centres of the rings and serve.

(If liked the rings can be dipped into frying batter instead of being egg and bread-crumbed.)

Before frying older marrows, peel them and boil them first till tender, then drain well and proceed as above.

OIL MARKS.

Oil marks, especially the oil from machinery, are difficult to remove from men's shirts and overalls without a little preliminary help in the form of carbon tetrachloride, which can be obtained from any large chemist's and is quite cheap. It is as effective as petrol and—what is important—is not inflammable.

NET CURTAINS.

When making net curtains the pins supposed to hold the hems only too easily drop out of the open mesh. Get a packet of small invisible hairpins and use these instead.

They stay in, yet are easily drawn out when the job is done.

CAULIFLOWER PIE.

Cauliflower or broccoli pie is well worth trying. Boil the vegetable in salted water till tender, then drain. Beat up to a cream, season, add a sprinkling of herbs, some grated cheese and a little milk. Butter a casserole, put some of the mixture at the bottom, and over it some sliced tomatoes.

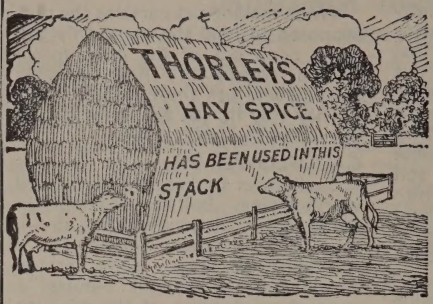
Follow this with some finely sliced onion and a pat or two of butter. Repeat till full and cover with cold potato, mashed. Bake for about half an hour.

SALMON SALAD.

For this you can use cold cooked salmon or the tinned variety. Remove all skin and bones and flake the fish slightly. Pile in the centre of a dish. Pour over some jelly mayonnaise—to make, previously heat some mayonnaise gently, add to it a little powdered gelatine dissolved in a little water, when setting pour over the salmon. Edge the dish with crisp heart of lettuce and surround the mayonnaise with alternate slices of cucumber and radish. Decorate the mayonnaise with capers, chopped parsley and a touch or two of red radish skin.

SODA BREAD.

Take 1 lb. whole-meal flour (or white flour, if desired), 1 teaspoonful cream of tartar, 1 teaspoonful carbonate of soda, ½ pint butter milk (½ pint sweet milk with a further teaspoonful cream of tartar will be as good) and 1 teaspoonful salt. Mix all the dry ingredients, add the milk and mix to a nice light dough; turn on floured board, knead lightly to make dough smooth, shape into round flat cake, place on tin, bake for one hour in moderate oven (or a little longer if whole-meal flour is used).



Thorley's Hay Spice

(The above illustration is one from an original advertisement published more than 50 years ago.)

LIKE Thorley's Food, Hay Spice is a condiment. It improves the flavour of Hay, Chop and Chaff, and is particularly useful when these have been damaged by weather.

Hay Spice should be sprinkled on the Hay at the time of stacking at the rate of 1 cwt. of Spice to 20 tons of Hay, or 6 lbs. to the ton.

For Chop and Chaff the Spice should be sprinkled in at the same rate at the time of cutting and should then be left for a week or ten days to mature, otherwise the aroma is too pungent.

For Hay, Chop or Chaff for immediate use it is better to use Thorley's Food at the rate of 7-21 lbs. to the ton, according to condition.

LIGHT HORSES.

IF we compare the numbers of "Other Horses on Agricultural Holdings" in 1938 with those of 1926 we find that there has been a drop of approximately 68,000 in the twelve years. This is hardly surprising when we think of the way in which tractors and motor cars have replaced horses everywhere, and comparatively few farmers nowadays use horses for riding round their farms or drive a trap. But in spite of this there were actually more light horses on the farms in 1938 than there were in 1933, thus showing that the tendency to give up horses of this sort has been stopped. Furthermore, it is a matter of common observation that riding for pleasure is definitely on the increase. More people are taking to riding every year, and the numbers turning out in the hunting field—particularly women and children—are increasing steadily.

To cope with this increasing demand for riding horses a very large number of establishments and "Riding Schools" have sprung up, particularly in those districts within reasonable reach of the large towns. Many of these are very well run and supply good horses, suitably trained. But, unfortunately, an equally large number are run under conditions which are far from ideal. Such "Schools" endeavour to attract their customers by undercutting prices; and since it is quite impossible to provide good horses, properly fed and turned out, for the 3s. 6d. an hour which many of them charge, the only way to make ends meet is at the expense of the wretched horses. Hence animals are bought because they are cheap, or in other words because they are unsound or too old, and are then turned into veritable slaves. At the week-ends especially it is no uncommon thing for such horses to be sent out again immediately they come in from one ride; and since the riders who patronise such establishments are usually those who have no knowledge of horsemanship, and whose sole idea is to get their money's worth, they usually do far too much galloping—quite regardless of the state of the ground—and bring their horses back in a muck sweat. To add to the trouble such horses are seldom properly fed, for their owners know little of stable management and are content with inferior oats and any sort of hay so long as it is cheap. The Riding Schools Bill has been brought in in an attempt to remedy this state of affairs, and is receiving the cordial support of all reputable riding establishments and such bodies as the Institute of the Horse.

Oats, bran and hay have been the staple foods for horses "from time immemorial," but the skilled horsemaster knows that horses in hard work want more than this if they are to give of their best. The hunting man, after a long and hard day, insists on his horse having gruel on its return ; this can most easily be made by adding a packet of Thorley's "Grula" to a bucket of hot water. Other Thorley specialities, such as Thorley's Food and Vitum, will do much towards keeping horses in perfect condition, and the small expense involved is well worth while.

SEED SOWING PROBLEMS.

FOR hoed crops like roots, it is essential that the seed should be drilled, but with cereals there is the alternative of broadcasting, for these are seldom hoed nowadays. Few will deny that the advantages lies with drilling when circumstances permit, though the balance in its favour may not be very great. The chief point is that the drill deposits the seed at an even depth, and distributes it more regularly than can be done by hand. As a result, rather less seed is allowed for drilling than for broadcasting.

There are times, however, when broadcasting is preferable, because it does not demand such good soil conditions. Should the season necessitate sowing when the soil is too wet and pasty for the drill to work well, broadcasting may often be done.

Another problem is the quantity of seed to sow—a point on which practice differs widely. For instance, of oats, quantities varying from 2½ to 6 bushels per acre have been recommended, so that the beginner may well wonder what circumstances are to guide him to the correct amount.

The first consideration is the time of sowing, for the later this is done the greater will be the amount of seed required to give a full plant. The next factor is the condition of the land. Naturally, less seed is required if the land is good than if it is poor. On land in good heart, cereals tiller out more, and too thick seeding would increase the risk of weak straw and a laid crop. Finally, there is the influence of the quality of the seed. Of good pedigree seed obtained from seedsmen of repute less seed is required than of an ordinary farmer's sample.

WHEN AND HOW TO SOW SEEDS OF VARIOUS CROPS.

Name.	Average Weight per Bushel.	Quantity generally Sown per Acre.	Notes on Sowing and Planting.
	lb.		
Barley	56	2 to 3 bushels	6 to 9 in. drills, Feb. and March, or Sept. to Dec., according to variety
Field Beans	64	3 bushels	24 in. drills in autumn and spring
Beet	20 to 23	12 lb.	16 in. drills in April
Buckwheat	50	2 bushels	Broadcast in May and June
Cabbage	52	4 to 6 lb.	March and August in drills
Cabbage	—	1 to 2 lb.	In beds for transplanting
Carrots	36	4 lb.	18 in. drills in spring
Clover	60 to 66	16 lb.	Broadcast in spring
Clover, Crimson	60	24 lb.	Broadcast after corn harvest
Grasses and Clovers	(1 years ley)	26 lb.	Broadcast March to May; also may be sown in autumn
	(2 years ley)	30 lb.	
	(3 years ley)	32 lb.	
	(for pasture)	40 lb.	
Kale (Marrow Stem)	52	4 to 6 lb.	March to August in drills
Kale (Thousand-headed)	52	4 to 6 lb.	March to August in drills
Lucerne	62	16 lb.	In drills, 12 in. apart, April, May; or broadcast, 24 lb.
Mangolds	20 to 23	8 lb.	30 in. drills, April or May
Mustard	54	20 lb.	Broadcast May to August
Oats	40 to 50	4 bushels	6 in. drills, Feb. to April, or Sept. to Dec., according to variety
Parsnips	18	8 lb.	6 in. drills, end of winter
Peas	60 to 65	4 bushels	9 to 24 in. drills, Feb. to May
Potatoes	56	12 cwt.	In rows, 18 to 30 in. wide; sets, 12 to 24 in. apart, in spring
Rye	60	3 to 4 bushels	6 in. drills, or broadcast, in spring and end of summer
Sainfoin	30 (in husk) 60 (milled)	56 lb.	Broadcast or 12 in. drills in March (or 4 to 5 bushels seed in husk)
Swedes	52	4 lb.	27 in. drills, May and June
Tares (Vetches)	64	3 to 4 bushels	6 in. drills, autumn, spring and summer
Trefoil	60	16 lb.	Broadcast in spring
Trifolium (see Crimson Clover)	60	24 lb.	Broadcast on corn stubble
Turnips	52	4 lb.	27 in. drills, May to July
Wheat	60 to 64	3 to 4 bushels	6 to 9 in. drills, October to April.

AVERAGE LIVE WEIGHTS AND MAINTENANCE REQUIREMENTS PER HEAD PER DAY OF COWS OF THE DAIRY BREEDS.

Breed.	Average Live Weight.	Maintenance Requirements.	
		Starch Equivalent.	Protein Equivalent.
	lb.	lb.	lb.
South Devon	1,450	7.6	0.86
Lincoln Red Shorthorn	1,300	7.1	0.77
Longhorn			
Dairy Shorthorn	1,250	6.9	0.74
British Friesian			
Blue Albion	1,150	6.6	0.68
Welsh Black			
Red Poll	1,100	6.4	0.65
Ayrshire	1,000	6.0	0.60
Guernsey	950	5.8	0.57
Kerry	850	5.3	0.51
Jersey	800	5.1	0.48
Dexter	650	4.4	0.39

OXFORD AND CAMBRIDGE BOAT RACE.

Subjoined is a Table of Results. Course—From Putney to Mortlake.

Year.	Date.	Winner.	Time.	Won by.	Year.	Date.	Winner.	Time.	Won by.
			m. s.					m. s.	
1874	—	Cambridge	22 35	2½ lengths	1905	Apr. 1	Oxford	20 35	3 lengths
1875	—	Oxford	22 2	10 ,,	1906	Apr. 7	Cambridge	19 24	3½ ,,
1876	—	Cambridge	20 20	8 ,,	1907	Mar. 16	Cambridge	20 26	4½ ,,
1877	Mar. 24	Dead heat	24 8	—	1908	Apr. 4	Cambridge	19 19	2½ ,,
1878	Apr. 13	Oxford	22 13	10 lengths	1909	Apr. 3	Oxford	19 50	3½ ,,
1879	Apr. 5	Cambridge	21 20	2½ ,,	1910	Mar. 23	Oxford	20 14	3½ ,,
1880	Mar. 22	Oxford	21 23	3 ,,	1911	Apr. 1	Oxford	18 29	3¾ ,,
1881	Apr. 8	Oxford	21 54	3 ,,	1912	Apr. 1	Oxford	22 5	6 ,,
1882	Apr. 1	Oxford	20 12	7 ,,	1913	Mar. 13	Oxford	20 53	¾ length
1883	Mar. 15	Oxford	21 8	4 ,,	1914	Mar. 28	Cambridge	20 23	4½ lengths
1884	Apr. 7	Cambridge	21 39	2½ ,,	1915-1919		Abandoned owing to War		
1885	Mar. 28	Oxford	21 37	3 ,,	1920	Mar. 27	Cambridge	21 11	4 lengths
1886	Apr. 3	Cambridge	22 29	⅔ length	1921	Mar. 30	Cambridge	19 45	1 length
1887	Mar. 26	Cambridge	20 52	3½ lengths	1922	Apr. 5	Cambridge	19 27	4½ lengths
1888	Mar. 24	Cambridge	20 48	5 ,,	1923	Mar. 24	Oxford	20 54	¾ length
1889	Mar. 30	Cambridge	20 14	3 ,,	1924	Apr. 1	Cambridge	18 41	4½ lengths
1890	Mar. 26	Oxford	22 3	1 length	1925	Mar. 28	Cambridge	21 30	10 ,,
1891	Mar. 21	Oxford	21 48	½ ,,	1926	Mar. 27	Cambridge	19 29	5 ,,
1892	Mar. 22	Oxford	19 21	2¼ lengths	1927	Apr. 2	Cambridge	20 14	3 ,,
1893	Apr. 9	Oxford	18 47	1 lth. 4 ft.	1928	Mar. 31	Cambridge	20 25	10 ,,
1894	Mar. 17	Oxford	21 39	3½ lengths	1929	Mar. 23	Cambridge	19 24	7 ,,
1895	Mar. 30	Oxford	20 50	2¼ ,,	1930	Apr. 12	Cambridge	19 9	2 ,,
1896	Mar. 28	Oxford	20 2	2 ,,	1931	Mar. 21	Cambridge	19 26	2½ ,,
1897	Apr. 3	Oxford	19 12	2½ ,,	1932	Mar. 19	Cambridge	19 11	5 ,,
1898	Mar. 26	Oxford	22 15	13 ,,	1933	Apr. 1	Cambridge	20 57	2¼ ,,
1899	Mar. 25	Cambridge	21 4	3¼ ,,	1934	Mar. 17	Cambridge	18 3	4¼ ,,
1900	Mar. 31	Cambridge	18 47	20 ,,	1935	Apr. 6	Cambridge	19 48	4½ ,,
1901	Mar. 30	Oxford	22 31	2 ,,	1936	Apr. 4	Cambridge	21 6	5 ,,
1902	Mar. 23	Cambridge	19 9	5 ,,	1937	Mar. 24	Oxford	22 39	3 ,,
1903	Apr. 1	Cambridge	19 36	6 ,,	1938	Apr. 2	Oxford	20 30	2 ,,
1904	Mar. 26	Cambridge	21 37	4½ ,,					

WINNERS OF PRINCIPAL RACES 1893-1938.

	DERBY.	OAKS.	ST. LEGER.	2,000 GUINEAS.	ASCOT CUP.
1893	Mr. H. M'Calmont's Isinglass	Mrs. Butterwick.	Isinglass	Isinglass	Marcion
1894	Lord Rosebery's Ladas	Amiable	Throstle	Ladas	La Fleche
1895	Lord Rosebery's Sir Visto	La Sagesse	Sir Visto	Kirkconnell	Isinglass
1896	H.R.H. Prince of Wales's Persimmon	Cant'bry. Pilgrim.	Persimmon	St. Frusquin	Love Wisely
1897	Mr. J. Gubbin's Galtee More	Limasol	Galtee More	Galtee More	Persimmon
1898	Mr. J. W. Lamach's Jeddah	Airs and Graces.	Wildflower	Disraeli	Elf II
1899	Duke of Westminster's Flying Fox	Musa	Flying Fox	Flying Fox	Cyllene
1900	H.R.H. Prince of Wales's Diamond Jubilee	La Roche	Diamond Jubilee.	Diamond Jubilee.	Merman
1901	Mr. W. C. Whitney's Volodyovski	Cap and Bells II.	Doricles	Handicapper	Santoi
1902	Mr. J. Gubbin's Ard Patrick	Sceptre	Sceptre	Gubbin	William III
1903	Sir J. Miller's Rock Sand	Our Lassie	Rock Sand	Rock Sand	Maximum II
1904	Mr. L. De Rothschild's St. Amant	Pretty Polly	Pretty Polly	St. Amant	Throwaway
1905	Lord Rosebery's Cicero	Cherry Lass	Challacombe	Vedas	Zinfandel
1906	Major Loder's Spearmint	Keystone II	Troutbeck	Gorgos	Bachelor's Bt.
1907	Mr. R. Croker's Orby	Glass Doll	Woolwinder	Slieve Gallion	The White Kt.
1908	Chevalier Ginistrelli's Signorinetta	Signorinetta	Your Majesty	Norman III	The White Kt.
1909	H.M. The King's Minoru	Perola	Bayardo	Minoru	Bomba
1910	Mr. Fairie's Lemberg	Rosedrop	Swynford	Nell Gow	Bayardo
1911	Mr. J. B. Joel's Sunstar	Cherimoya	Prince Palatine	Sunstar	Willonyx
1912	Mr. W. Raphael's Tagalie	Mirska	Tracery	Sweeper II	Prince Palatine
1913	Mr. A. P. Cunliffe's Aboyeur	Jest	Night Hawk	Louviois	Prince Palatine
1914	Mr. H. B. Duryea's Durbar II	Princess Dorrie	Black Jester	Kennymore	Aleppo
1915*	Mr. S. Joel's Pommern	Snow Marten		Pommern	No Race—War
1916*	Mr. E. Hulton's Fifinella	Fifinella		Clarissimus	Do.
1917*	Mr. Fairie's Gay Crusader	Sunny Jane	†Gay Crusader	Gay Crusader	Do.
1918*	Lady J. Douglas's Gainsborough	My Dear	†Gainsborough	Gainsborough	Do.
1919	Lord Glanely's Grand Parade	Bayuda	Keysoe	The Panther	By Jingo
1920	Captain G. Loder's Spion Kop	Charlebelle	Caligula	Tetratema	Tangiers
1921	Mr. J. B. Joel's Humorist	Love in Idleness	Polemarch	Craig an Eran	Perlosteum
1922	Lord Woolavington's Captain Cuttle	Pogrom	Royal Lancer	St. Louis	Golden Myth
1923	Mr. B. Irish's Papyrus	Brownyhyda	Tranquil	Ellangowan	Happy Man
1924	Lord Derby's Sansovino	Straitlace	Salmon Trout	Diophon	Mastine
1925	Mr. H. E. Morris's Manna	Saucy Sue	Solario	Manna	Santorb
1926	Lord Woolavington's Coronach	Short Story	Coronach	Colorado	Solario
1927	Mr. F. Curzon's Call Boy	Beam	Book Law	Adam's Apple	Foxlaw
1928	Sir H. Cunliffe Owen's Felstead	Toboggan	Fairway	Flamingo	Invershin
1929	Mr. W. Barnett's Trigo	Pennycomequick	Trigo	Mr. Jinks	Invershin
1930	The Aga Khan's Blenheim	Rose of England	Singapore	Diolite	Bosworth
1931	Mr. J. A. Dewar's Cameronian	Brulette	Sandwich	Cameronian	Trimdon
1932	Mr. Tom Wall's April the Fifth	Udaipur	Firdaussi	Orwell	Trimdon
1933	Lord Derby's Hyperion	Chatelaine	Hyperion	Rodosto	Foxhunter
1934	The Maharaja of Rajpipla's Windsor Lad	Light Brocade	Windsor Lad	Colombo	Felicitation
1935	The Aga Khan's Bahram	Quashed	Bahram	Bahram	Tiberius
1936	The Aga Khan's Mahmoud	Lovely Rosa	Boswell	Pay Up	Quashed
1937	Mrs. G. B. Miller's Mid-Day Sun	Exhibitionist	Chumleigh	Le Kiar	Precipitation
1938	Mr. P. Beatty's Bois Roussel	Rockfel	Scottish Union	Pasch	Flares

* Derby and Oaks run at Newmarket.

† Run at Newmarket.

INCOME TAX RATES FROM 1872 TO PRESENT TIME.

From and to April 5th.	Income free under.	Standard Rate in the £.	Chancellor of the Exchequer.	Premier.
1872 to 1873	£100	4d.	Robert Lowe	William E. Gladstone
1873 ,, 1874	Do.	3d.	Do.	Do.
1874 ,, 1876	Do.	2d.	Sir Stafford Northcote	Benjamin Disraeli
1876 ,, 1878	£150	3d.	Do.	Earl of Beaconsfield
1878 ,, 1880	Do.	5d.	Do.	Do.
1880 ,, 1881	Do.	6d.	William E. Gladstone	William E. Gladstone
1881 ,, 1882	Do.	5d.	Do.	Do.
1882 ,, 1883	Do.	6½d.	Do.	Do.
1883 ,, 1884	Do.	5d.	Hugh C. E. Childers	Do.
1884 ,, 1885	Do.	6d.	Do.	Do.
1885 ,, 1886	Do.	8d.	Sir M. Hicks Beach	Marq. of Salisbury
1886 ,, 1887	Do.	8d.	Sir Wm. Harcourt	William E. Gladstone
1887 ,, 1888	Do.	7d.	George J. Goschen	Marq. of Salisbury
1888 ,, 1892	Do.	6d.	Do.	Do.
1892 ,, 1893	Do.	6d.	Sir Wm. Harcourt	William E. Gladstone
1893 ,, 1894	Do.	7d.	Do.	Do.
1894 ,, 1895	£160	8d.	Do.	Lord Rosebery
1895 ,, 1900	Do.	(a) 8d.	Sir M. Hicks Beach	Marq. of Salisbury
1900 ,, 1901	Do.	1s.	Do.	Do.
1901 ,, 1902	Do.	1s. 2d.	Do.	Do.
1902 ,, 1903	Do.	1s. 3d.	Do.	Do.
1903 ,, 1904	Do.	11d.	C. T. Ritchie	A. J. Balfour
1904 ,, 1906	Do.	1s.	A. Chamberlain	Do.
1906 ,, 1908	Do.	1s.	H. H. Asquith	Sir H. Campbell-Bannerman
1908 ,, 1909	Do.	1s.	D. Lloyd George	H. H. Asquith
1909 ,, 1914	Do.	(b) 1s. 2d.	Do.	Do.
1914 ,, 1915	Do.	1s. 8d.	Do.	Do.
1915 ,, 1916	Do.	3s.	R. McKenna	Do.
1916 ,, 1918	£130	5s.	A. Bonar Law	D. Lloyd George
1918 ,, 1921	Do.	(c) 6s.	A. Chamberlain	Do.
1921 ,, 1922	Do.	5s.	Sir Robert Horne	Do.
1922 ,, 1923	Do.	5s.	Stanley Baldwin	A. Bonar Law
1923 ,, 1924	Do.	4s. 6d.	N. Chamberlain	Stanley Baldwin
1924 ,, 1925	Do.	4s. 6d.	Philip Snowden	J. Ramsay MacDonald
1925 ,, 1930	£135	4s.	Winston Churchill	Stanley Baldwin
1930 ,, 1931	Do.	4s. 6d.	Philip Snowden	J. Ramsay MacDonald
1931 ,, 1932	£100	(d) 5s.	Do.	Do.
1932 ,, 1934	Do.	5s.	N. Chamberlain	Do.
1934 ,, 1935	Do.	4s. 6d.	Do.	Do.
1935 ,, 1936	£125	(e) 4s. 6d.	Do.	Stanley Baldwin
1936 ,, 1937	Do.	(f) 4s. 9d.	Do.	Do.
1937 ,, 1938	Do.	5s.	Sir John Simon	N. Chamberlain
1938 ,, 1939	Do.	(g) 5s. 6d.	Do.	Do.

NOTES.

(a) Abatements at varying rates allowed on incomes not exceeding a maximum varying from £200 (in 1863) to £700 (1898-1920).

(b) From 1909 to 1920 there was a complicated system of abatements, allowances for children, etc., while the rate of tax varied according to the individual's total income. Earned income was taxed at a lower rate than unearned.

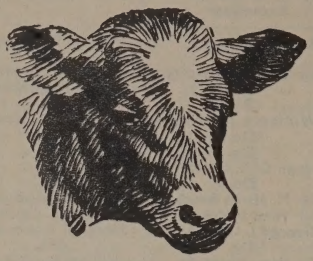
(c) In 1920 the method of giving abatements and the varying rate of tax was abolished, and a system of allowances was instituted.

(d) 1931-1935 allowances: Married couples £150 plus 4/5ths wife's earnings (maximum £45). Children, first, £50; others, £40. Earned income 1/5th (maximum £300). Dependent relative £25. Housekeeper £50. First £175 of taxable income charged at half rate, remainder at full rate. Persons over 65 with income limit £500 (or just over) allowed deduction 1/5th from all income.

(e) Finance Act, 1935. Alterations: Married persons' allowances increased to £170. (Single person allowance remains same, i.e., £100). Children allowance £50 each. In lieu of first £175, taxable income at half rate, now: First £135 at 1/3rd rate. No tax on incomes not exceeding £125. Tax on incomes between £125 and £140 not to exceed 1/5th of excess of income over £125. Other allowances remain as before, except for modification of life insurance allowances on small incomes.

(f) Finance Act, 1936. Alterations, as compared with previous year: Married persons' allowance increased to £180. Children's allowance increased to £60 for each child.

(g) First £135 of taxable income, rate 1s. 8d.

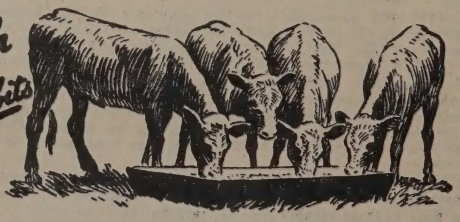


Start well with Calf-a-bits

CALF-A-BITS are a first-class ration for young calves in cube form. The same ration is obtainable as meal for Gruel Feeding. Fed either way the results are the same—healthy robust calves.

At the age of 4 months the growing calves can be changed over to Thorley's Growing Cake-a-bits. This ration, which is considerably below the Calf-a-bits in price, ensures the continuance of steady growth. Take a week in changing the feed.

Carry on with Growing Cake-a-bits



FARMYARD MANURE.

THAT farmyard manure varies in composition, and therefore in usefulness, is known to every farmer, and is amply confirmed by the researches of science. Some factors which influence its composition are largely beyond the control of the farmer. The age, class and type of animal maintained influence the nature of the dung heap but these factors are determined by the system of farming pursued. The kind of ration fed also exercises a marked influence, every farmer knowing that dung from beasts fed on turnips and straw is poorer than that from cattle receiving linseed or other high grade cake in the ration. No wise farmer, however, feeds cake to the stock for the sake of the manure or land. With the price of nitrogen in artificial fertilisers at its present level, wasteful feeding of high protein cake cannot be justified on the ground that it will help the dung.

Farmyard manure is a manufactured or made product, as distinct from the distribution of the droppings from cattle or sheep grazing and folding. It consists in the combination of liquid and solid excreta with some suitable binding absorbing or holding material. In the storing and application the farmer does exercise a control which plays an important part in determining its composition. The amount and type of litter used influences the degree of absorption of the most valuable part of farmyard manure.

Exposure to the washing of winter rains is the commonest source of loss to the manure heap. The value of good flooring and a roof for covering boxes and yards where stock are wintered is evidenced by the better effects from the dung produced under such conditions. In one experiment there was four times as much nitrogen found in the dung unexposed to the rain washing.

The best dung is made in covered boxes or yards with watertight floors where it is never moved until applied to the land. Plenty of litter and trampling with stock prevent excessive aeration and loss of valuable plant food. Under the best of conditions there is bound to be a certain loss in the storing of farmyard manure, hence there is something to be said for carting out each day for incorporation with the land where circumstances permit.

But such procedure is seldom possible, and it behoves every farmer to take as much care of the dung heap as possible. The heap should preferably contain mixed dung from stables, cowsheds and pigsties, and must be left well consolidated.

GOOD AND BAD SEASONS AND HARVESTS.

With the average price of wheat per quarter in England and Wales, together with the number of cwts. of wheat and of wheat flour imported in the United Kingdom to supply deficiencies :—

Year.	England and Wales. Wheat Harvest compared with the average of 30 years, 1905-1934.	Average Price of Wheat per Qr.	United Kingdom. Imports of Wheat.	Imports of Wheat-flour.
		s. d.	Cwts.	Cwts.
1901	Average	26 9	69,708,530	22,576,430
1902	Good	28 1	81,002,227	19,386,341
1903	Deficient	26 9	88,131,030	20,601,448
1904	Extremely bad	28 4	97,782,500	14,722,893
1905	Good	29 8	97,622,752	11,954,763
1906	Very good	28 3	92,967,200	14,190,300
1907	Very good	30 7	97,168,000	13,297,366
1908	Decidedly above average...	32 0	91,131,205	12,969,855
1909	Very good	36 11	97,854,425	11,052,540
1910	Deficient	31 8	105,222,638	9,960,491
1911	Good	31 8	98,067,787	10,065,132
1912	Bad	34 9	109,572,539	10,189,476
1913	Decidedly above average...	31 8	105,878,102	11,978,153
1914	Good	34 11	103,926,743	10,060,223
1915	Decidedly above average...	52 10	88,667,900	10,482,170
1916	Bad	58 5	100,070,320	9,960,325
1917	Deficient	75 9	91,435,006	14,339,782
1918	Good	72 10	57,947,610	26,359,600
1919	Bad	72 11	71,443,000	17,711,070
1920	Bad	80 10	109,328,326	11,969,640
1921	Extremely good	71 6	80,478,794	15,841,055
1922	Fair	47 10	96,379,634	13,474,721
1923	Fair	42 2	100,467,000	11,718,000
1924	Fair	49 3	117,420,522	11,045,853
1925	Good	52 2	96,854,178	9,112,614
1926	Deficient	53 3	96,256,030	10,661,076
1927	Slightly above average	49 3	110,435,815	10,960,907
1928	Good	42 10	103,577,471	8,926,841
1929	Very good	42 2	111,767,398	9,703,446
1930	Deficient	34 3	104,774,738	11,728,234
1931	Deficient	24 8	119,418,582	10,747,088
1932	Slightly above average	25 4	105,637,134	8,529,532
1933	Decidedly above average...	22 10	112,374,798	9,843,347
1934	Extremely good	20 9	102,625,344	9,447,139
1935	Good	22 2	101,225,904	7,981,469
1936	Bad	30 9	100,772,430	8,366,523
1937	Deficient	40 0	96,883,523	8,540,892

Note.—Figures for 1937 are provisional.

YIELD PER ACRE.

The yield per acre of each of the principal crops in England and Wales, Great Britain and the United Kingdom in 1937 :—

Crop.	England and Wales.	Great Britain.	United Kingdom.
Wheat ...Bushels	29.1	29.7	29.7
Barley ... ,,	29.1	30.1	30.2
Oats ... ,,	43.3	43.6	44.8
Beans ... Cwts.	17.2	—	—
Sugar Beet Tons	8.3	8.3	8.3
Potatoes ... ,,	6.9	6.9	6.9
Turnips and Swedes ,,	10.9	13.3	13.4
Mangolds... ,,	17.8	17.9	17.9
Hay ... Cwts. (Rotation)	29.2	30.3	30.6

NUMBER OF HOLDINGS.

The number of agricultural holdings in each of the undermentioned classes in England and Wales, Great Britain and the United Kingdom, as returned on June 4, 1937 :—

Size of Farm or Holding.	England and Wales.	Great Britain.	United Kingdom.
Above 1 acre and not exceeding 5 acres	63,842	79,272	89,244
5-50 acres ...	166,266	199,691	267,390
50-100 ,, ...	61,933	72,025	84,088
100-150 ,, ...	31,901	37,792	)
150-300 ,, ...	34,288	41,014	97,144
Above 300 acres...	11,878	14,230	)
Total	370,108	444,024	537,866

THE WORLD'S CROPS, 1935-1937.

Production in Thousand Centals of 100 lbs.

WHEAT.

	1935.	1936.	1937.*
United States	375,806	376,059	524,396
India...	217,907	211,344	†
Canada	169,161	131,531	109,446
Australia	85,559	90,064	102,019
Hungary	50,535	52,674	41,937
France	170,973	152,773	152,124
Spain	94,793	72,896	†
Italy	169,658	134,744	177,609
Germany	102,894	97,597	96,717
Roumania	57,864	77,231	82,896
Bulgaria	28,755	36,211	38,946
Austria	9,306	8,424	8,682
Sweden	14,167	12,981	15,432
Denmark	8,804	6,760	8,157
United Kingdom	39,267	33,159	33,811
Egypt	25,933	27,420	27,226
South Africa	12,117	9,646	5,834
Japan...	29,233	27,117	30,247
Argentina	84,614	149,518	115,192
Poland	44,331	47,015	42,465
U.S.S.R.	679,683	†	†

BARLEY.

	1935.	1936.	1937.*
United States	137,177	70,788	105,425
India...	56,381	52,192	†
Canada	40,308	34,523	39,900
Hungary	12,268	14,514	10,412
France	22,621	22,467	21,963
Spain	46,589	37,690	†
Italy	4,410	4,246	5,149
Germany	74,682	74,937	78,184
Roumania	20,367	35,535	20,221
Bulgaria	6,211	7,109	7,273
Austria	5,959	6,130	5,505
Sweden	4,779	4,415	4,555
Denmark	24,415	19,803	24,030
United Kingdom	16,464	16,391	14,728
Egypt	5,021	5,196	5,075
Japan...	37,732	33,094	34,727
Argentina	10,141	14,330	11,905
Poland	32,372	30,896	30,058
U.S.S.R.	179,946	†	†

OATS.

	1935.	1936.	1937.*
United States	382,369	251,362	366,803
Canada	134,078	92,405	91,270
Hungary	5,421	5,776	5,184
France	98,228	92,914	100,477
Spain	12,598	12,183	†
Italy	11,358	10,545	13,629
Germany	118,734	123,865	129,378
Roumania	13,089	18,676	11,305
Bulgaria	2,041	2,998	3,230
Austria	8,616	9,421	9,116
Sweden	28,095	26,512	27,895
Denmark	22,971	18,437	22,267
United Kingdom	46,570	44,369	41,367
Czechoslovakia	22,644	26,860	30,255
Argentina	11,464	17,461	15,653
Poland	57,275	58,204	51,652
U.S.S.R.	402,746	†	†

RYE.

	1935.	1936.	1937.*
United States	32,814	14,179	27,691
Canada	5,379	2,397	3,232
Hungary	16,044	15,744	12,849
France	16,448	15,764	16,325
Spain	10,755	10,110	†
Italy	3,509	2,914	3,193
Germany	164,866	162,844	149,081
Roumania	7,126	9,992	9,950
Bulgaria	4,350	4,585	5,257
Austria	13,672	10,420	9,425
Sweden	9,585	7,749	9,100
Denmark	6,259	4,392	5,291
Poland	145,881	140,302	124,293
U.S.S.R.	465,565	†	†

MAIZE (Corn).

	1935.	1936.	1937.*
United States	1,286,135	843,970	1,481,197
India...	51,498	51,027	†
Canada	4,348	3,406	3,032
Hungary	31,269	57,168	59,347
France	12,622	11,712	12,072
Spain	16,215	†	†
Italy	55,031	67,266	75,445
Roumania	118,591	123,724	104,396
Bulgaria	22,244	19,213	18,944
Austria	2,814	3,767	3,995
South Africa	29,764	56,256	†
Argentina	219,793	201,387	99,208
U.S.S.R.	61,509	†	†

* Figures for 1937 are provisional. † Figures not yet available.

Note.—Yield in India from "Area and Yields of the Principal Crops in India, 1935-36." Other figures from publications of the International Institute of Agriculture.

THE UNITED KINGDOM'S IMPORTS OF GRAIN AND FLOUR.

(Calendar years January 1 to December 31.)

Year.	Wheat. (Thousand cwt.)	Oats. (Thousand cwt.)	Barley. (Thousand cwt.)	Maize. (Thousand cwt.)	Flour. (Thousand cwt.)
1929	111,767	6,930	11,986	34,909	9,703
1930	104,775	9,631	15,208	34,165	11,728
1931	119,419	8,753	15,423	53,261	10,747
1932	105,637	6,472	10,178	52,746	8,530
1933	112,375	5,620	15,985	51,316	9,843
1934	102,625	3,210	15,476	61,350	9,447
1935	101,226	3,554	17,097	59,456	7,981
1936	100,772	2,161	18,294	73,293	8,367
1937*	96,884	1,208	18,192	71,760	8,541

* Figures for 1937 are provisional.

Note.—These accounts include the trade of Great Britain and Northern Ireland with the Irish Free State and exclude the direct foreign trade of the Irish Free State.

IMPORTS AND EXPORTS. OF HORSES.

Year.	Horses Imported.	Horses Exported.	Year.	Horses Imported.	Horses Exported.
1867	1,461	4,136	1903	27,266	35,402
1868	1,575	4,091	1904	18,491	33,789
1869	1,849	2,210	1905	13,711	48,799
1870	2,387	7,202	1906	17,848	61,673
1871	3,448	7,172	1907	15,922	61,783
1872	12,618	3,383	1908	13,216	54,550
1873	17,822	2,816	1909	16,774	58,559
1874	12,033	3,050	1910	14,674	61,728
1875	25,757	3,135	1911	11,528	65,701
1876	41,148	2,659	1912	12,646	68,671
1877	30,524	2,258	1913	1,899	69,878
1878	26,521	2,967	1914	18,662	38,458
1879	15,246	5,018	1915	8,692	1,659
1880	9,294	5,128	1916	1,213	1,960
1881	9,950	6,018	1917	1,870	1,554
1882	8,827	6,444	1918	24,929	1,071
1883	9,927	7,376	1919	52,337	—
1884	12,828	6,973	1920	3,265	56,778
1885	13,023	6,196	1921	2,927	47,743
1886	11,027	7,326	1922	1,718	18,332
1887	11,649	9,455	1923	2,822	18,570
1888	11,504	12,884	1924	21,272	28,647
1889	13,859	14,267	1925	39,351	17,021
1890	19,504	12,922	1926	13,808	10,546
1891	21,715	11,238	1927	13,783	13,982
1892	21,036	11,233	1928	12,061	14,463
1893	13,719	11,961	1929	12,260	13,022
1894	22,866	16,558	1930	11,878	12,271
1895	35,092	21,564	1931	11,936	8,945
1896	40,677	29,480	1932	19,803	3,713
1897	49,510	34,471	1933	6,731	2,895
1898	42,921	36,412	1934	9,801	2,693
1899	43,900	33,701	1935	13,530	2,357
1900	51,787	30,038	1936	15,761	3,557
1901	40,856	27,661	1937	17,557	3,629
1902	32,686	30,085			

IMPORTS OF LIVE STOCK FOR FOOD.

Year	Cattle.	Sheep.	Pigs.	Total.
1898	569,066	663,749	450	1,233,265
1899	503,504	607,755	—	1,111,261
1900	495,645	382,833	—	878,478
1901	499,563	383,594	—	879,229
1902	419,488	293,199	—	712,687
1903	522,546	354,241	—	876,787
1904	549,532	382,240	—	913,772
1905	565,139	183,084	150	748,373
1906	561,215	103,359	—	664,574
1907	472,015	105,601	—	577,616
1908	383,129	78,900	—	462,029
1909	321,640	8,131	—	329,471
1910	219,561	427	—	219,988
1911	200,398	47,673	—	248,071
1912	48,912	15,430	—	64,342
1913	14,743	501	—	15,244
1914	2,234	1,707	—	3,941
1915	1,598	—	—	1,598
1916	2,069	—	—	2,069
1917	1,673	—	—	1,673
1918	1,006	—	—	1,006
1919	1,551	—	—	1,551
1920	1,739	169	—	1,908
1921	68,799	10,704	—	79,503
1922	50,902	5	—	50,907
1923	592,382	375,537	279,207	1,247,126
1924	1,010,198	589,107	234,536	1,833,841
1925	800,144	400,587	97,695	1,298,426
1926	708,868	482,216	231,309	1,422,393
1927	636,868	584,397	394,740	1,616,005
1928	724,917	591,691	318,286	1,634,894
1929	750,262	584,631	311,102	1,645,995
1930	840,561	567,192	414,587	1,822,340
1931	766,523	561,165	478,941	1,806,629
1932	642,611	440,871	302,760	1,386,261
1933	633,607	318,299	143,970	1,095,876
1934	509,537	362,989	133,913	1,006,439
1935	599,122	278,969	127,989	1,006,080
1936	695,058	455,583	120,721	1,271,362
1937	650,049	311,752	42,524	1,004,325

From April 1, 1923, these accounts include the trade of Great Britain and Northern Ireland with the Irish Free State. From the same date, the direct foreign trade of the Irish Free State has been excluded from these accounts.

WEIGHT OF PRODUCT PER BUSHEL.

	lbs.
Barley Meal...	30
Bean Meal	50
Bran (home milled)	13
Brewers' Grains (wet)	40
Brewers' Grains (dried)	20
Carrots (whole)	40
Cotton Cake (broken decorticated) ...	45
Cotton Cake (broken undecorticated) ...	40
Hay (chaffed)	5
Linseed Cake (broken)	44
Linseed Meal	35
Maize (flaked)	20
Maize or India Meal	50
Malt Culms...	17
Mangolds or Swedes (whole)	45
Mangolds or Swedes (sliced or pulped) ...	40
Molasses	96
Oats (crushed)	25
Oats (ground)	30
Oat Straw (chaffed)	5
Potatoes	56
Sugar Beet Pulp (dried)	20
Turnips (whole)	42
Turnips (sliced or pulped)	36
Weatings	28
Wheat (ground)	55

MEASURING AN ACRE.

A field of any of the following dimensions contains 1 acre :—

5	yards	wide by	968	long.
10	,,	,,	484	,,
16	,,	,,	303	,,
20	,,	,,	242	,,
22	,,	,,	220	,,
30	,,	,,	161	,,
40	,,	,,	121	,,
47	,,	,,	103	,,
50	,,	,,	97	,,
55	,,	,,	83	,,
59	,,	,,	82	,,
70	,,	,,	69	,,
80	,,		60½	,,

BARBED WIRE FOR FENCING.

	1 line.	2 lines.	3 lines.
1 square acre ...	50⅜ lb.	101½ lb.	152 lb.
1 rod in length (16½)	1 ,,	2 ,,	3 ,,
100 feet in length ...	6 1/16 ,,	12⅛ ,,	18 3/16 ,,

AVERAGE PRICE OF ENGLISH WHEAT PER IMPERIAL QUARTER SINCE 1665.

	s.	d.		s.	d.		s.	d.		s.	d.
1665	43	10	1733	25	2	1801	119	6	1869	48	2
1666	32	0	1734	30	9	1802	169	10	1870	46	11
1667	32	0	1735	38	2	1803	158	10	1871	56	8
1668	35	6	1736	35	10	1804	62	3	1872	57	0
1669	39	5	1737	33	9	1805	89	9	1873	58	8
1670	37	0	1738	31	6	1806	79	1	1874	55	9
1671	37	4	1739	34	2	1807	75	4	1875	45	1
1672	36	5	1740	45	1	1808	81	4	1876	46	2
1673	41	5	1741	41	5	1809	97	4	1877	56	9
1674	61	0	1742	30	2	1810	96	5	1878	46	5
1675	57	5	1743	22	1	1811	95	3	1879	43	10
1676	33	9	1744	22	1	1812	126	6	1880	44	4
1677	37	4	1745	24	5	1813	109	9	1881	45	4
1678	52	5	1746	34	8	1814	174	4	1882	45	1
1679	53	4	1747	30	11	1815	165	7	1883	41	7
1680	40	0	1748	32	10	1816	78	6	1884	35	8
1681	41	5	1749	32	10	1817	96	1	1885	32	10
1682	39	1	1750	28	10	1818	86	3	1886	31	0
1683	35	6	1751	34	2	1819	74	6	1887	32	6
1684	39	1	1752	37	2	1820	67	0	1888	31	10
1685	41	5	1753	39	8	1821	56	11	1889	29	9
1686	30	2	1754	30	9	1822	44	7	1890	31	11
1687	22	4	1755	30	1	1823	53	4	1891	37	0
1688	40	10	1756	40	1	1824	63	1	1892	30	3
1689	26	8	1757	53	4	1825	68	6	1893	26	4
1690	30	9	1758	44	5	1826	58	8	1894	22	10
1691	30	2	1759	35	3	1827	58	6	1895	23	1
1692	41	5	1760	32	5	1828	60	5	1896	26	2
1693	60	1	1761	26	9	1829	66	3	1897	30	2
1694	56	10	1762	34	8	1830	64	3	1898	34	0
1695	47	1	1763	36	1	1831	66	4	1899	25	8
1696	63	1	1764	41	5	1832	58	8	1900	26	11
1697	53	4	1765	48	0	1833	52	1	1901	26	9
1698	60	9	1766	43	1	1834	46	2	1902	28	1
1699	56	10	1767	47	4	1835	39	4	1903	26	9
1700	35	6	1768	53	9	1836	56	2	1904	28	4
1701	33	5	1769	40	7	1837	55	0	1905	29	8
1702	26	2	1770	43	6	1838	64	7	1906	28	2
1703	32	0	1771	47	2	1839	70	8	1907	30	7
1704	41	4	1772	50	8	1840	66	4	1908	32	0
1705	26	8	1773	51	0	1841	64	4	1909	36	11
1706	23	1	1774	52	8	1842	57	3	1910	31	8
1707	25	4	1775	48	4	1843	50	1	1911	31	8
1708	36	10	1776	38	2	1844	51	3	1912	34	9
1709	69	9	1777	45	6	1845	50	10	1913	31	8
1710	69	4	1778	42	0	1846	54	8	1914	34	11
1711	48	0	1779	33	8	1847	69	9	1915	52	10
1712	41	2	1780	36	0	1848	50	6	1916	58	5
1713	45	4	1781	40	6	1849	44	3	1917	75	9
1714	44	9	1782	49	3	1850	40	3	1918	72	10
1715	38	2	1783	54	3	1851	38	6	1919	72	11
1716	42	8	1784	50	4	1852	40	9	1920	80	10
1717	40	7	1785	43	1	1853	52	3	1921	71	6
1718	34	6	1786	40	0	1854	72	5	1922	47	0
1719	31	1	1787	42	5	1855	74	8	1923	42	2
1720	32	10	1788	46	4	1856	69	2	1924	49	3
1721	33	4	1789	52	9	1857	56	4	1925	52	2
1722	32	0	1790	54	9	1858	44	2	1926	53	3
1723	30	10	1791	48	7	1859	43	9	1927	49	3
1724	32	10	1792	43	0	1860	53	3	1928	42	10
1725	43	1	1793	49	3	1861	55	4	1929	42	2
1726	40	10	1794	52	3	1862	55	5	1930	34	3
1727	37	4	1795	75	2	1863	44	9	1931	24	8
1728	48	5	1796	78	7	1864	40	2	1932	25	4
1729	41	7	1797	53	9	1865	41	0	1933	22	10
1730	32	5	1798	51	0	1866	49	11	1934	20	9
1731	29	2	1799	69	10	1867	64	5	1935	22	2
1732	23	8	1800	113	0	1868	63	9	1936	30	9

To Estimate the Contents of STACKS, SILOS, etc.

General rule :—Multiply area of base by perpendicular height.

The area of the base is ascertained as follows :—

(a) When rectangular—by multiplying the length by the breadth.

(b) When circular—by squaring the circumference and multiplying the product by .08.

Additional calculations in the case of stacks :—

1. Top in form of prism—obtain the area at the eaves in the same way as (a) and multiply by half the perpendicular height from the eaves to the top. Add this to the contents of the underlying portion.

2. Top in form of cone—obtain the area at the eaves in the same way as (b) and multiply by one-third the perpendicular height from the eaves to the top. Add this to the contents of the underlying portion.

The weight of hay varies from 1-2½ cwt. per cubic yard.

The number of cubic yards per ton under average conditions is as follows :—

Condition of Stack.	Square Stacks cu. yds.	Round Stacks cu. yds.
If not well settled ...	12	13
If fairly well settled...	10	11
If very compact ...	8	9

Number of cubic yards of straw per ton :—

Wheat straw	18-20
Oat	20-23
Barley	20-23

1 cubic yard of farmyard manure weighs 12 to 16 cwt., or 1 ton of farmyard manure bulks 1¼ to 1⅝ cubic yards. The weight of silage per cubic foot is very variable, depending on the depth of the silage, diameter of the silo, fineness of cutting, packing, etc.

WEIGHT PER CUBIC FOOT OF ROOTS IN CLAMP.

Carrots	31 lbs
Parsnips	31 ,,
Turnips	33 ,,
Swedes	34 ,,
Mangolds	35 ,,
Potatoes	42 ,,

TELEPHONE CHARGES.

A fee of 1d. is charged for each call to an Exchange within a radius of 5 miles, and 2d. for each call to an Exchange within a radius of 7½ miles of the originating Exchange.

The fees for Trunk Calls, i.e., calls to Exchanges more than 7½ miles from the originating Exchange (with certain extensions of area in London, Birmingham, Glasgow, Liverpool and Manchester), are as follows :—

For Distances up to and including	5 a.m. to 9 a.m.	9 a.m. to 2 p.m.	2 p.m. to 7 p.m.	7 p.m. to 5 a.m.
	s. d.	s. d.	s. d.	s. d.
12½ miles	3	3	3	3
15 ,, ...	4	4	4	3
20 ,, ...	5	7	5	4
25 ,, ...	7	9	7	5
35 ,, ...	9	1 0	9	6
50 ,, ...	1 0	1 3	1 0	9
75 ,, ...		1 6		1 0
125 ,, ...		2 0		1 0
Over 125 miles ...		2 6		1 0
Personal Call Charge, irrespective of distance or duration...	6	1 0	6	6

CASH ON DELIVERY SERVICE.

The value of an article sent by Parcel Post can, on certain conditions, be collected from the addressee by the Post Office and remitted to the sender by means of a Special Order. Parcels may be posted at any Money Order Post Office for delivery at any address in Great Britain and Northern Ireland, including the Channel Islands and the Isle of Man. Such parcels may be registered if desired. The service does not apply to the Irish Free State in either direction.

The amount to be collected on delivery, called the Trade Charge, must not exceed £40.

The Cash on Delivery fees, which are additional to the ordinary parcel postage, are as follows :—

Trade Charge not exceeding

	Fees.		Fees.
10s.	4d.	£5	10d.
£1	6d.	£10	1s.
£2	8d.		

and 2d. for each additional £5 or fraction of £5, up to the maximum of £40.

The sender must write on an adhesive address label—supplied free on demand—or on the cover of the parcel:—

(1) The name and address of the addressee.
(2) His own name and address.
(3) The amount of the Trade Charge.

And fill up the special Trade Charge Form which will be handed to him.

The ordinary postage must be prepaid by means of a stamp or stamps affixed to the parcel (or address label). The Cash on Delivery Fee must be prepaid by a postage stamp or stamps affixed to the counterfoil of the Trade Charge Form.

Certificate of posting will be given if desired as in the case of an ordinary parcel.

The Trade Charge will be remitted to the sender of the parcel by means of a "crossed" Order. This Order is not negotiable, but special arrangements are made to meet the convenience of payees who have no banking account.

POSTAL INFORMATION.

Letters.—Not exceeding 2 oz. 1½d., for every additional 2 oz. ½d. (In the Irish Free State, not exceeding 3 oz. 2d., for each additional oz. ½d.) Limit of dimensions 2 ft. long, 1 ft. wide or deep. Weight unlimited.

Postcards 1d.

Printed Papers.—½d. for packets up to 2 oz.; for every additional 2 oz. ½d. Weight limit, 2 lb.

Newspapers.—If registered, 1d. each up to 6 oz. Foreign and Colonial, 1d. per 2 oz.

Parcel Post.—Not exceeding 3 lb., 6d.; for every additional 1 lb. up to 8 lb., 1d.; 8 lb., but not exceeding 15 lb., 1s. Maximum weight 15 lb. Maximum length, 3 ft. 6 in.; maximum length and girth combined, 6 ft.

Express Delivery Service.—There are three services:—(1) By special messenger all the way, week-days only, from most offices which deliver telegrams. Inclusive charge, 6d. per mile, with 1d. on each separate packet after the first, up to 10; also a special charge of 3d. on each packet over 1 lb. in weight. Live animals, liquids and money may be delivered by this service, and persons may be conducted. The messenger may take back an inland telegram gratis. (2) By special messenger after transmission by post (charge 6d. as before, exclusive of postage with special charges as before except weight fee). (3) In advance of the ordinary deliveries at the request of addressee (6d. per mile for one packet and 1d. for every 10 or less additional packets). For (1) packets must be handed over the counter with "Express" clearly marked in left-hand top corner; for (2) may be handed in or posted, and must be marked "Express" with a broad vertical line back and front.

Foreign Postage.—To British Possessions, generally, Australia, Egypt and H.M. Ships of War serving abroad, also to the United States, 1½d. the first oz., and 1d. each succeeding oz. or fraction; postcards 1d. To all other places, 2½d. for the first oz., and 1½d. for each additional oz.

Money Orders.—Sums not exceeding £3, 4d.; exceeding £3 but not exceeding £10, 6d.; £10 but not exceeding £20, 8d.; £20 but not exceeding £30, 10d.; £30 but not exceeding £40, 1s. Foreign and Colonial Poundage.—£1, 6d.; £2, 1s.; £3 1s. 6d.; and thereafter 3d. per £ or part thereof. Limit of amount, £40.

Postal Orders for 6d. up to 21s. are now issued. Poundage: 6d. to 2s. 6d., 1d.; 3s. to 15s., 1½d.; 15s. 6d. to 21s., 2d. British Postal Orders are issued and paid in many British Possessions and other places abroad.

Telegrams.—Nine words or less, 6d. (in I.F.S. 1s. 6d.), each further word 1d. Telegrams on Sundays and certain public holidays, 6d. extra.

Savings Bank.—Deposits can be made from 1s. to £500 in one year, and interest is at 2½ per cent.

STAMPS, TAXES, etc.

Agreement, memorandum of, 6d.; for furnished house (rent over £25), for less than a year, 5s.

Appraisement or valuation of any estate or effects, amount under £5, 3d.; £10, 6d.; £20, 1s.; £30, 1s. 6d.; £40, 2s.; £50, 2s. 6d.; £100, 5s.; £200, 10s.; £500, 15s.; exceeding £500, 20s.

Bill of Exchange and Promissory Notes.—Not exceeding £10, 2d.; under £25, 3d.; under £50, 6d.; under £75, 9d.; under £100, 1s.; every additional £100 or fraction thereof, 1s.

Conveyance.—Under £5, 1s.; under £10, 2s.; under £15, 3s.; under £20, 4s.; under £25, 5s.; for every additional £25 up to £300, 5s.; if exceeding £300, then for every £50, 10s.

Mortgage Bond, not exceeding £10, 3d.; £25, 8d.; £50, 1s. 3d.; £100, 2s. 6d.; £150, 3s. 9d.; £200, 5s.; £250, 6s. 3d.; £300, 7s. 6d.; exceeding £300, for every £100 and fractional part of £100, 2s. 6d.

Leases.—Lease of lands, tenements, etc., at yearly rent not exceeding £5, 1s.; and 1s. every £5 if term is under 35 years.

Carriages.—Four-wheeled for more than one horse, 2 guineas; ditto for one horse, 1 guinea; two-wheeled, 15s. Motor Cars.—Not exceeding 6 h.p., £4 10s.; exceeding 6 h.p. or each unit or part of a unit of h.p., 15s. Motor Cycles not exceeding 150 c.c., 12s.; from 150 to 250 c.c., 22s. 6d.; exceeding 250 c.c., 45s., with an additional 15s. for sidecar in each case. Tricycles, £4. Locomotive Ploughing Engines, Tractors, etc., not used for haulage, 5s. Tractors and Engines used for haulage solely in connection with agriculture, not exceeding 5 tons unladen, £6; exceeding 5 tons, £10.

Game Licence.—Whole year £3; from Aug. 1 to Oct. 31, £2; from Nov. 1 to July 31, £2. Gun licence, 10s. Gamekeepers, £2; deputation, 10s. Dog tax, 7s. 6d.

Income Tax Schedule "A" (Property Tax).—Assessment is on valuation, based on rack rental value, less fixed allowance for repairs. Tax payable by occupier, but occupier can deduct from next payment of rent. When assessment is more than rent payable per annum, occupier pays tax on difference.

Repairs.—Persons ultimately liable to pay Schedule "A" Tax can claim to substitute their average cost of repairs if more than the fixed allowance.

Income Tax on Profits.—Farmer normally assessed under Schedule "B." Assessment based on valuation, as for Schedule "A," but without repairs allowance. Farmer has, however, options as follows:—

(1) If profits for year are less than Schedule "B" assessment, can claim to be assessed on actual profits for that year.

(2) Can be assessed (under Schedule "D") on profits of previous year. Request for this to be made before June 6 in year of assessment.

(3) Loss made can be set off against any assessment for same year. Claim to be made within 12 months of end of year of assessment.

(4) Losses not covered under (3) can be carried forward up to 6 years to set off against future profits. Dairy farmers and cattle dealers may be, and market gardeners are, assessed under Schedule "D" (profits of previous year).

Wear and tear allowance on plant and implements should be claimed if assessed on actual profits.

The whole law relating to Income Tax as applied to farmers and occupiers of land is so complicated that in nearly all cases it is advisable to consult a Chartered Accountant.

Thorley's Corn Ready Reckoner.

Per Qtr. of 280 lb.	Per Qtr. of 304 lb.	Per Qtr. of 320 lb.	Per Qtr. of 336 lb.	Per Qtr. of 400 lb.	Per Qtr. of 416 lb.	Per Qtr. of 448 lb.	Per Qtr. of 480 lb.	Per Qtr. of 492 lb.	Per Qtr. of 496 lb.	Per Qtr. of 504 lb.	Per Qtr. of 528 lb.	Per Qtr. of 532 lb.	Per Cental of 100 lb.	
7/6	8/1½	8/6¾	9/–	10/8½	11/1¾	12/–	12/10¼	13/2	13/3½	13/6	14/1¾	14/3	2/8	Equals 3/– per cwt.
8/1½	8/9¾	9/3½	9/9	11/7¼	12/0¾	13/–	13/11¼	14/3½	14/4¾	14/7½	15/4	15/5¼	2/11	,, 3/3 ,,
8/9	9/6	10/–	10/6	12/6	13/–	14/–	15/–	15/4½	15/6	15/9	16/6	16/7½	3/1½	,, 3/6 ,,
9/4½	10/2	10/8½	11/3	13/4½	13/11½	15/–	16/0½	16/5½	16/7½	16/10½	17/8½	17/9¾	3/4½	,, 3/9 ,,
10/–	10/10¼	11/5½	12/–	14/3½	14/10¼	16/–	17/1¾	17/6¾	17/8½	18/–	18/10½	19/–	3/7	,, 4/– ,,
10/7½	11/6¼	12/1¾	12/9	15/2	15/9½	17/–	18/2½	18/8	18/9¾	19/1½	20/0¼	20/2½	3/9½	,, 4/3 ,,
11/3	12/2½	12/10½	13/6	16/0½	16/8½	18/–	19/3½	19/9½	19/11¼	20/3	21/2½	21/4½	4/0¼	,, 4/6 ,,
11/10½	12/10¾	13/6¾	14/3	16/11½	17/7¾	19/–	20/4¼	20/10½	21/0½	21/4½	22/4¾	22/6¾	4/3	,, 4/9 ,,
12/6	13/6¾	14/3¾	15/–	17/10¼	18/6¾	20/–	21/5	21/11½	22/1¾	22/6	23/6¾	23/9	4/5½	,, 5/– ,,
13/1½	14/3	15/–	15/9	18/9	19/6	21/–	22/6	23/0¾	23/3	23/7½	24/9	24/11¼	4/8¼	,, 5/3 ,,
13/9	14/11	15/8½	16/6	19/7¾	20/5	22/–	23/6¾	24/2	24/4½	24/9	25/11	26/1½	4/11	,, 5/6 ,,
14/4½	15/7¾	16/5	17/3	20/6¼	21/4½	23/–	24/7½	25/3	25/5½	25/10½	27/1¾	27/3½	5/1½	,, 5/9 ,,
15/–	16/3¼	17/1½	18/–	21/5	22/3½	24/–	25/8½	26/4¼	26/6¾	27/–	28/3½	28/6	5/4¼	,, 6/– ,,
15/7½	16/11½	17/10¼	18/9	22/3¾	23/2½	25/–	26/9½	27/5½	27/8	28/1½	29/5½	29/8½	5/7	,, 6/3 ,,
16/3	17/7¾	18/6¾	19/6	23/2½	24/1¾	26/–	27/10¼	28/6½	28/9½	29/3	30/7½	30/10½	5/9½	,, 6/6 ,,
16/10½	18/3¼	19/3¼	20/3	24/1½	25/0¾	27/–	28/11	29/7¾	29/10¾	30/4½	31/10	32/0¾	6/0¼	,, 6/9 ,,
17/6	19/–	20/–	21/–	25/–	26/–	28/–	30/–	30/9	31/–	31/6	33/–	33/3	6/3	,, 7/– ,,
18/1½	19/8	20/8½	21/9	25/10¾	26/11	29/–	31/0¾	31/10½	32/1¼	32/7½	34/2	34/5½	6/5¾	,, 7/3 ,,
18/9	20/4½	21/5	22/6	26/9¾	27/10¼	30/–	32/1¾	32/11¼	33/2½	33/9	35/4½	35/7½	6/8½	,, 7/6 ,,
19/4½	21/0½	22/1¾	23/3	27/8½	28/9½	31/–	33/2½	34/0½	34/3¾	34/10½	36/6¼	36/9½	6/11	,, 7/9 ,,
20/–	21/8½	22/10½	24/–	28/6¾	29/8½	32/–	34/3¼	35/1½	35/5¼	36/–	37/8½	38/–	7/1¾	,, 8/– ,,
20/7½	22/4½	23/6¾	24/9	29/5½	30/7¾	33/–	35/4¼	36/3	36/6½	37/1½	38/10¾	39/2¼	7/4½	,, 8/3 ,,
21/3	23/0¾	24/3½	25/6	30/4½	31/7	34/–	36/5¼	37/4	37/7¾	38/3	40/1	40/4½	7/7	,, 8/6 ,,
21/10½	23/9	25/–	26/3	31/3	32/6	35/–	37/6	38/5½	38/9	39/4½	41/3	41/6¾	7/9½	,, 8/9 ,,
22/6	24/5	25/8½	27/–	32/1¾	33/5	36/–	38/6¾	39/6¾	39/10¼	40/6	42/5	42/9	8/0¼	,, 9/– ,,
23/1½	25/1¼	26/5	27/9	33/0¾	34/4½	37/–	39/7¾	40/7½	40/11½	41/7½	43/7¼	43/11¼	8/3	,, 9/3 ,,
23/9	25/9¼	27/1¾	28/6	34/–	35/3½	38/–	40/8½	41/8¾	42/0¾	42/9	44/9½	45/1½	8/6	,, 9/6 ,,
24/4½	26/5½	27/10¼	29/3	34/9¾	36/2½	39/–	41/9½	42/10	43/2¼	43/10½	45/11	46/3½	8/8½	,, 9/9 ,,
25/–	27/1¾	28/6¾	30/–	35/8½	37/1¾	40/–	42/10¼	43/11½	44/3½	45/–	47/1¾	47/6	8/11	,, 10/– ,,
25/7½	27/9¾	29/3½	30/9	36/7¼	38/1	41/–	43/11¼	45/0¼	45/4¾	46/1½	48/3½	48/8½	9/2	,, 10/3 ,,
26/3	28/6	30/–	31/6	37/6	39/–	42/–	45/–	46/1½	46/6	47/3	49/6	49/10½	9/4½	,, 10/6 ,,
26/10½	29/2½	30/8½	32/3	38/4¾	39/11	43/–	46/0¾	47/2¾	47/7½	48/4½	50/8	51/0¾	9/7½	,, 10/9 ,,
27/6	29/10½	31/5¼	33/–	39/3½	40/10	44/–	47/1¾	48/3¾	48/8½	49/6	51/10	52/3	9/10	,, 11/– ,,

DUNLOP PRESS, LONDON.

THORLEY PRODUCTS FOR THE STABLE

Vitum

Thorley's Concentrated Condition Powder for Horses.

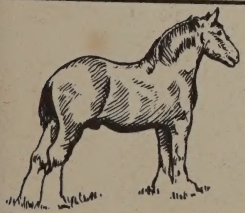
THIS powder acts as a valuable blood-purifying tonic for horses of every description. It also expels worms and, more important still, keeps horses from their attacks.

Full directions and a measure with each tin.

Grula

Thorley's Concentrated Gruel for Horses.

A packet of Grula mixed with two quarts of water, preferably tepid, makes a splendid pick-me-up for a horse during a spell of hard work—it is a real reviver.

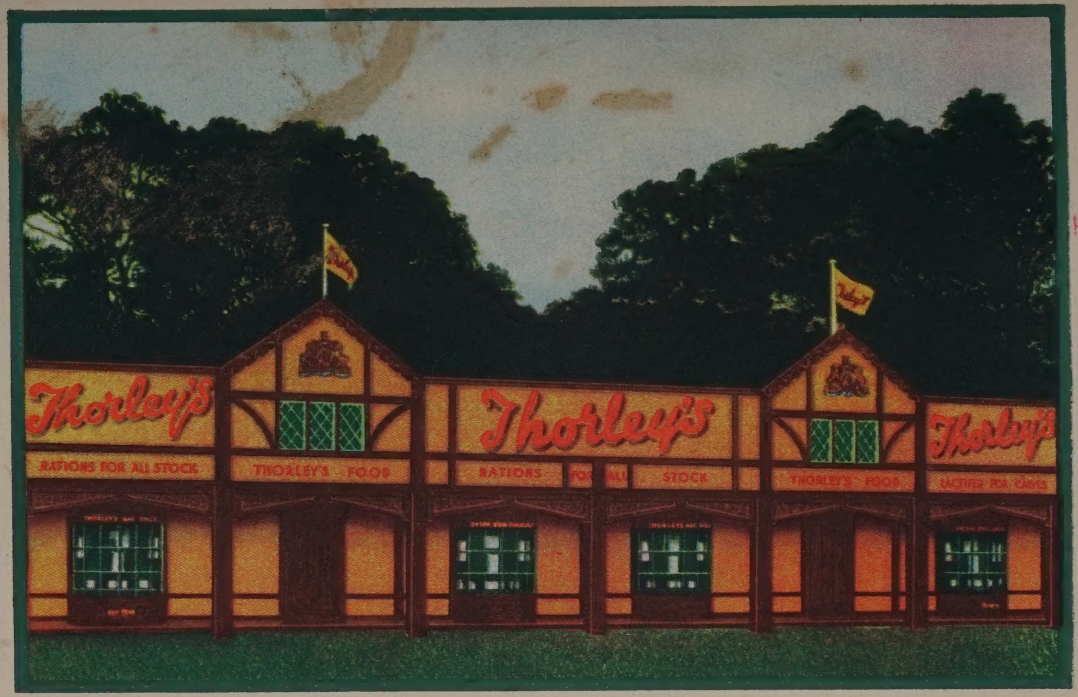


Thorley's Food

THORLEY'S Food is not a food in itself but **the** Condiment for inclusion with the usual feed.

It aids digestion and assimilation helps the horse to get the maximum nutrition out of its rations, and tones up the system generally.

Feeding directions with each package.



THORLEY'S STAND, ROYAL AGRICULTURAL SHOW, CARDIFF, 1938.